S. HRG. 98-716

CONTRACTUAL ARRANGEMENTS WITH THE TENNESSEE VALLEY AUTHORITY FOR THE PURCHASE OF ELECTRIC POWER

HEARING

BEFORE THE

SUBCOMMITTEE ON
REGIONAL AND COMMUNITY DEVELOPMENT

OF THE

COMMITTEE ON
ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE

NINETY-EIGHTH CONGRESS

FIRST SESSION

NOVEMBER 14, 1983

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CONTRACTUAL ARRANGEMENTS WITH THE TENNESSEE VALLEY AUTHORITY FOR THE PURCHASE OF ELECTRIC POWER

MONDAY, NOVEMBER 14, 1983

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
SUBCOMMITTEE ON REGIONAL AND COMMUNITY DEVELOPMENT,
Washington, D.C.

The subcommittee met at 10:30 a.m., in room SD-406, Dirksen Senate Office Building, Hon. Gordon J. Humphrey (chairman of the subcommittee) presiding.

Present: Senators Humphrey and Domenici.

OPENING STATEMENT OF HON. GORDON J. HUMPHREY, U.S. SENATOR FROM THE STATE OF NEW HAMPSHIRE

Senator HUMPHREY. The subcommittee will come to order.

We meet this morning to discuss the matter of the DOE's requirements to pay to TVA some one and a quarter billion dollars over the next 10 years for electricity which TVA has built the capacity to generate but which the Department of Energy no longer will need.

We have representatives from the Department of Energy, from the Tennessee Valley Authority, and counsel to utilities in the Middle South who have expressed an interest in purchasing that electricity. We don't formally have someone here representing the taxpayer, who will be shellacked by $1¼ billion in the next 10 years, so I will be that representative.

We have a real problem, and we are going to have to solve it. It is simply unacceptable that with the deficits facing us the taxpayers are expected to spend $1¼ billion for nothing. I hope that we can find some means of cooperation amongst the parties to insure that in the final analysis that does not come to pass.

I will put my formal statement, as well as a statement from Senator Burdick, in the record.

[The statements referred to follow:]

STATEMENT OF HON. GORDON J. HUMPHREY

CHAIRMAN, SENATE SUBCOMITTEE ON REGIONAL AND COMMUNITY DEVELOPMENT OF THE SENATE ENVIRONMENT AND PUBLIC WORKS COMMITTEE

IT IS MY HOPE THAT TODAY'S HEARING WILL NOT ONLY BENIFIT TENNESSEE VALLEY AUTHORITY (TVA), THE DEPARTMENT OF ENERGY (DOE), THE UTILITIES SOUTH OF TVA, AND THE NUCLEAR INDUSTRY, BUT THE TAXPAYERS OF THIS NATION AS WELL. THE PROBLEM TO BE ADDRESSED TODAY IS THE HUNDREDS OF MILLIONS OF DOLLARS DOE IS SPENDING ANNUALLY TO TVA IN FEES FOR ELECTRICITY NEITHER PRODUCED NOR USED.

THESE FEES, KNOWN AS DEMAND CHARGES, ARE PAID TO TVA BECAUSE DOE's PREDECESSOR, THE ATOMIC ENERGY AGENCY, MISTAKENLY CONTRACTED WITH TVA TO BUY FAR MORE ELECTRICITY TO RUN THE NATION'S URANIUM ENRICHMENT PLANTS THAN IN FACT WAS NEEDED. URANIUM IS ISOTOPICALLY ENRICHED BY THE FEDERAL GOVERNMENT SO THAT THE MATERIAL CAN BE USED AS REACTOR FUEL BY NUCLEAR ELECTRIC UTILITIES. IN THE LATE 1960S AND THE EARLY 1970S THE GOVERNMENT ASSUMED A VERY HIGH RATE OF GROWTH IN NUCLEAR DEMAND AND THEREFORE ASSUMED THAT THERE WOULD BE A TREMENDOUS DEMAND FOR FEDERAL ENRICHMENT SERVICES. THESE GROWTH ASSUMPTIONS TURNED OUT TO BE VERY WRONG--IN SPECIFIC, NEARLY 10 TIMES TOO HIGH (SEE CHART I, APPENDED).

HAVING CONTRACTED TO BUY ENORMOUS AMOUNTS OF ELECTRICITY FROM TVA TO MEET THIS MISTAKENLY HIGH PROJECTED DEMAND FOR ENRICHMENT SERVICES, DOE WAS STUCK WITH THE CONTRACT REQUIRMENT THAT IT PAY TVA'S FIXED COSTS FOR GEARING UP TO SUPPLY DOE'S PROJECTED DEMAND. THESE PAYMENTS, KNOWN AS DEMAND CHARGES, MUST BE PAID

WHETHER OR NOT DOE USES THE POWER OR NOT.

UNTIL RECENTLY DOE PAID LITTLE OR NO DEMAND CHARGES TO TVA. THIS YEAR, HOWEVER, IT IS PAYING TVA $116 MILLION AND IN 1984 IT WILL PAY NEARLY A QUARTER OF A BILLION DOLLARS TO TVA. OVER THE NEXT EIGHT YEARS DOE PROJECTS THAT IT WILL HAVE TO PAY OUT AT LEAST $1.23 BILLION IN DEMAND CHARGES (SEE CHART 2, APPENDED). AGAIN THIS IS FOR POWER NEITHER PRODUCED NOR USED.

THIS $1 BILLION-PLUS FEDERAL EXPENDITURE IS ITSELF UPSETTING. WHAT COMPOUNDS THIS BAD SITUATION IS THAT THESE DEMAND CHARGES ARE PART OF THE REASON WHY DOE IS CURRENTLY HAVING DIFFICULTY SELLING ITS ENRICHMENT SERVICES AT A COMPETITIVE PRICE. INDEED, NEARLY 75 PERCENT OF THE COST OF PRODUCTING ENRICHED URANIUM FROM EXISTING GASEOUS DIFFUSION PLANTS IS ATTRIBUTABLE TO THE COST OF ELECTRICITY AND TVA, IT TURNS OUT, CHARGES 50 TO 70 MORE FOR ITS ELECTRICITY DOE THAN DOE'S OTHER TWO ELECTRICITY SUPPLIERS--OHIO VALLEY ELECTRIC COROPORATION (OVEC) AND ELECTRICAL ENERGY INCORPORATED (EEI). THIS PRICE DIFFERENTIAL PLUS TVA'S DEMAND CHARGES HAVE A DRAMATIC EFFECT ON DOE'S COSTS.

ENRICHMENT IS SOLD IN UNITS KNOWN AS SEPARATIVE WORK UNITS OR SWUS. DOE'S CURRENT ENRICHMENT COST IS $138 PER SWU. TODAY I AM RELEASING A GENERAL ACCOUNTING OFFICE REPORT THAT DETERMINED THAT BY ELIMINATING TVA'S DEMAND CHARGES, DOE COULD DROP ITS SWU PRICE TO $125 IMMEDIATELY. OVER THE LIFETIME OF THE DOE-TVA CONTRACT GAO DETERMINED THAT DOE COULD RECOVER ITS COSTS BY CHARGING AN AVERAGE PRICE OF $114 PER SWU. IF BOTH TVA DEMAND CHARGES WERE ELIMINATED AND TVA CHARGED WHAT OVEC AND EEI DO FOR ELECTRICITY (ABOUT 25 MILS PER KILOWATT), DOE COULD REDUCE ITS SWU PRICE EVEN

FURTHER TO $116 IMMEDIATELY AND TO AN AVERAGE PRICE OF $106 OVER THE LIFETIME OF THE TVA-DOE CONTRACT (SEE CHART 3 APPENDED).

REDUCTIONS OF THIS SORT COULD HELP DOE HOLD ON TO ITS DOMESTIC MARKET, WHICH IS CURRENTLY BEING UNDERMINED BY CHEAPER FOREIGN SUPPLIERS. SUCH REDUCTIONS ALSO WOULD REDUCE THE URGENCY OF PROCEEDING WITH ALL OF DOE'S $10-BILLION PLUS NEW ENRICHMENT PROGRAM, THE GAS CENTRIFUGE ENRICHMENT PROJECT (GCEP), WHICH ITSELF WAS CONCEIVED TO GET AROUND THE HIGH ELECTRICITY COST OF USING THE EXISTING ENRICHEMENT PLANTS.

TO DATE TVA HAS NOT BEEN INTERESTED IN LETTING DOE OFF OF ITS CONTRACT OBLIGATION TO PAY DEMAND CHARGES. A CONTRACT, THEY INSIST, IS A CONTRACT. WHAT IS DISCONSERTING HERE, THOUGH, IS THAT THE CONTRACT THAT IS CAUSING SO MUCH WASTE IS BETWEEN ONE TAXPAYER FUNDED FEDERAL AGENCY AND ANOTHER. THEN TOO, BY WAY OF CONTRAST, OVEC AND EEI, HAVE RELEASED DOE FROM SUCH CHARGES TO THE EXTENT THAT THESE UTILITIES HAVE BEEN ABLE TO FIND OTHER BUYERS FOR THE ELECTRICITY DOE CONTRACTED TO BUY FROM THEM BUT CAN'T USE.

BUT THIS IS THE RUB. UNLIKE OVEC OR EEI, TVA NOT ONLY HAS A SURPLUS OF ELECTRICITY GENERATING CAPACITY FOR THE TVA REGION BUT IT IS PROHIBITED FROM SELLING ELECTRICITY OUTSIDE OF THIS REGION BY FEDERAL LAW. CONFRONTED WITH THIS PROBLEM, SOME IN CONGRESS HAVE SUGGESTED THAT THE LAW BE CHANGED. I AM NOT ONE OF THEM. INDEED, I DO NOT THINK THIS IS WISE OR NECESSARY AND I AM SURE THAT EVERY PRIVATE INVESTOR OWNED UTILITY NEAR THE TVA REGION WOULD AGREE. WE ARE NOT GOING TO SOLVE TVA'S PROBLEMS BY ENLARGING TVA.

MORE IMPORTANT, CHANGING THE TVA ACT IS NOT NECESSARY TO REDUCE DOE'S TVA DEMAND CHARGES. UNDER EXISTING LAW AND THE CONTRACT TVA HAS WITH DOE, DOE COULD SELL SOME OR ALL OF THE ELECTRICITY IT IS CURRENTLY PAYING TVA DEMAND CHARGES ON TO WILLING UTILITIES OUTSIDE OF TVA IF TVA MERELY GAVE DOE ITS CONSENT AND ASSISTED DOE IN TRANMITTING THIS POWER OUT OF THE TVA REGION.

TO DATE THIS SOLUTION HAS NOT BEEN DISCUSSED PUBLICALLY. THUS TODAY'S HEARING AND MY ATTEMPT TO BRING THE KEY ACTORS THAT WOULD HAVE TO AGREE TO SUCH A SOLUTION TOGETHER TO TESTIFY. MR. LA GRONE, DOE'S MANAGER OF THE OAK RIDGE OPERATIONS OFFICE, IS HERE TODAY AS IS MR. PARRIS, THE POWER MANAGER OF TVA. IN ADDITION, MR. ROBERT THORINGTON, LEGAL COUNSEL REPRESENTING SEVERAL MUNICIPAL UTILITIES IN ALABAMA AND MISSISSIPPI THAT HAVE EXPRESSED AN INTEREST IN BUYING ELECTRICITY DOE IS PAYING DEMAND CHARGES ON HAS TRAVELLED FROM ALABAMA TO BE WITH US TODAY.

IT IS MY HOPE THAT WE CAN LEARN MORE FROM OUR WITNESSES ABOUT WHAT CAN BE DONE TO REDUCE DOE'S TVA DEMAND CHARGES. INDEED, AT THIS HEARING'S CONCLUSION I WILL ASK THE WITNESSES TO REPORT BACK TO THIS COMMITTEE BY FEBURARY 1, 1984 WITH A DRAFT AGREEMENT FOR THE SALE OF EXCESS DOE POWER. CERTIANLY IT IS ESSENTIAL THAT THIS MATTER BE REDRESSED BEFORE CONGRESS CONSIDERS ANY APPROPRIATIONS FOR DOE OR TVA NEXT YEAR.

CHART I

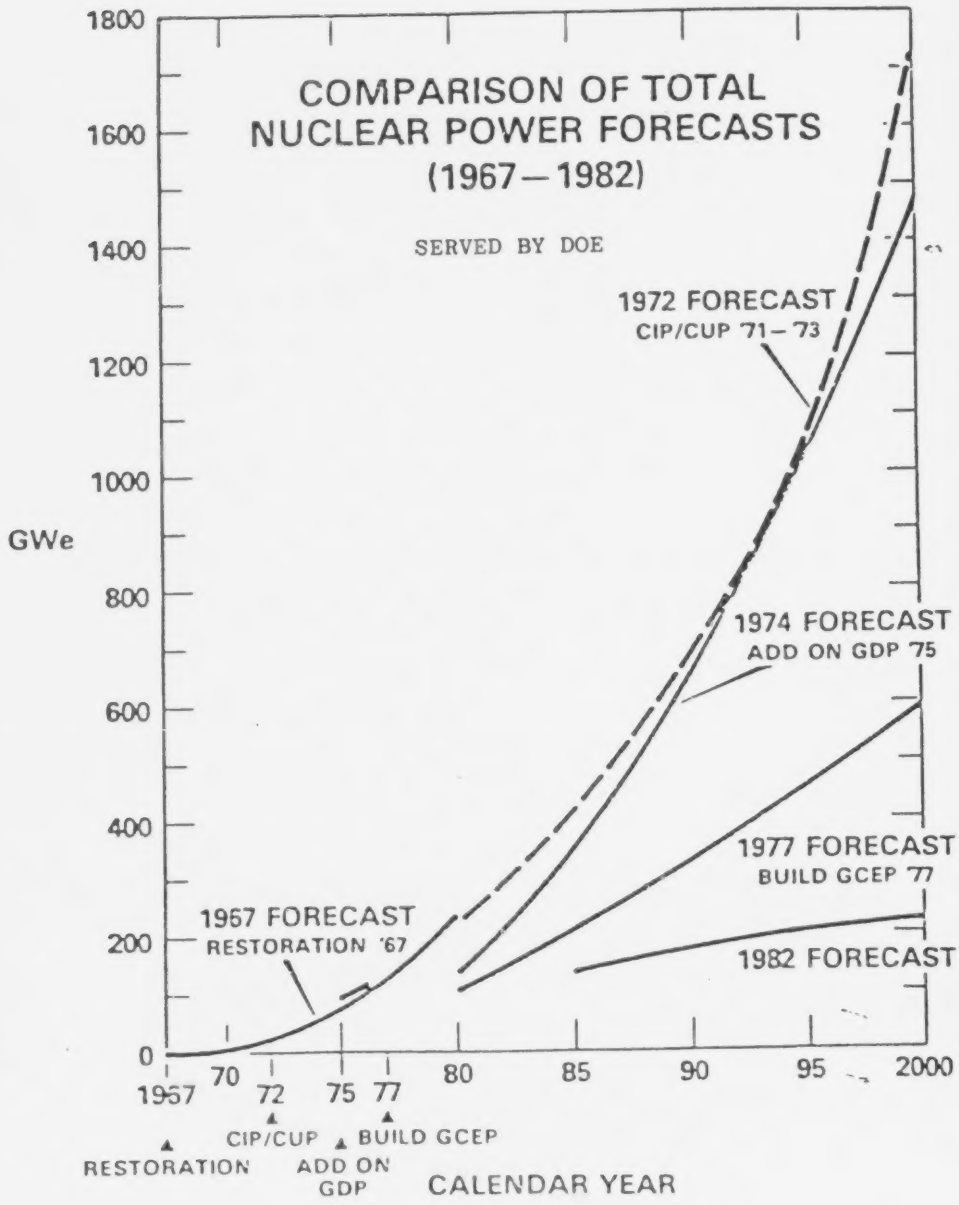
COMPARISON OF TOTAL
NUCLEAR POWER FORECASTS
(1967—1982)
SERVED BY DOE
1972 FORECAST
CIP/CUP '71—'73
1974 FORECAST
ADD ON GDP '75
1977 FORECAST
BUILD GCEP '77
1982 FORECAST
1967 FORECAST
RESTORATION '67
GWe
1800
1600
1400
1200
1000
800
600
400
200
0
1967
70
72
75
77
80
85
90
95
2000
RESTORATION
CIP/CUP
ADD ON
GDP
BUILD GCEP
CALENDAR YEAR

CHART II

AMOUNT AND COST OF TVA ELECTRICITY DOE CONTRACTED FOR BUT DOES NOT PLAN TO TAKE (note a)

Fiscal year	Electricity not taken (note c) Megawatts per year	Cost (in millions)	Percent of electricity under contract not taken
TVA			
1983	1,413	$ 116	45
1984	2,271	217	60
1985	2,120	202	47
1986	1,600	152	36
1987	1,360	130	30
1988	1,435	137	32
1989	1,655	157	37
1990	1,130	107	30
1991	130	12	5
1992	0	0	0
Total	13,114	$1,230	34
Ohio Valley Elec. Corp.			
1983-1992	320	18	2
Electric Energy Inc.			
1983-1992	0	0	0
Total	13,434	$1,248	22

CHART III

DOE-ESTIMATED SEPARATIVE WORK UNIT PRICE ASSUMING TVA POWER RATE OF 25 MILLS PER KILOWATT HOUR

Fiscal year	With demand charges	Without demand charges	Percent difference
	----(in constant 1984 dollars)---		
1984	$ 121.16	$ 115.94	4.3
1985	119.09	114.31	4.0
1986	116.69	112.32	3.7
1987	114.38	110.38	3.5
1988	112.18	108.51	3.3
1989	110.01	106.64	3.1
1990	107.91	104.81	2.9
1991	106.29	103.41	2.7
1992	104.32	101.66	2.5
1993	102.39	99.93	2.4
1994	100.53	98.26	2.2
1995	98.77	96.67	2.1
Cumulative averages	109.48	106.07	3.1

Source: Prepared by GAO using Office of Uranium Enrichment and Assessment, DOE, September 1983, estimates.

STATEMENT OF

HON. QUENTIN BURDICK,

U.S. SENATOR FROM NORTH DAKOTA,

BEFORE THE

SUBCOMMITTEE ON REGIONAL AND COMMUNITY DEVELOPMENT OF THE

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

UNITED STATES SENATE

I want to call the attention of my colleagues on this Subcommittee to a very important issue raised by these hearings relating to the Department of Energy's uranium enrichment program. In particular, I am referring to the potential effect on public power consumers in the region served by the Tennessee Valley Authority if DOE were to be relieved of its obligation to pay TVA for power that DOE has contracted to be made available.

Recognizing the benefits that flow to the ultimate electric consumer from the operation of consumer-owned electric systems--an abundance of reliable electricity at the lowest possible cost--I have long been an advocate and supporter of public power. I have a keen interest in matters which would impact the electric consumers in the Tennessee Valley region where TVA carries out its program,

in partnership with 160 municipal and cooperative distribution systems, of providing electricity to consumers at the lowest feasible cost.

It has been suggested by some that TVA should not require DOE to pay for the power DOE contracted for TVA to make available but which DOE does not now need in its uranium enrichment program. However, TVA has incurred real, and I might add, significant costs in providing facilities for making the power available. These costs must be recovered. If DOE were to be relieved of its obligations, those costs which were incurred to supply the power it requested and contracted for would have to be shifted unfairly from DOE to other TVA customers. This would increase substantially the electric bills of others in the TVA region, including consumers served by municipal and cooperative systems all across the Valley, to permit recovery of costs unrelated to their electric service. It would clearly thwart the very purpose of the TVA power program--particularly the congressional objective of making electric service available to these ultimate consumers at the lowest feasible cost.

I think it commendable that TVA on behalf of its consumers is insisting upon payment by DOE of its contract obligations to help recover the costs of serving the DOE loads, rather than shifting the brunt of those costs to other consumers. Obviously, if anyone is to absorb the costs of the unfortunate situation that confronts DOE, it should be the Nation's taxpayers as a whole who bought this power and agreed to pay for it rather than the electric consumers in the Tennessee Valley.

I thank my colleagues on this Subcommittee for their consideration of my remarks.

Senator HUMPHREY. We will begin by asking Mr. LaGrone for his statement. Good morning to each of you.

STATEMENT OF JOE LaGRONE, MANAGER, OAK RIDGE OPERATIONS OFFICE, DEPARTMENT OF ENERGY, OAK RIDGE, TENN., ACCOMPANIED BY RAY SULLIVAN AND EWIN KISER

Mr. LAGRONE. Thank you, Mr. Chairman.

My name is Joe LaGrone. Since April of this year, I have been manager of the Oak Ridge Operations Office of DOE.

In my testimony today I plan to speak on the excess electrical contract demands we have under contract with the Tennessee Valley Authority for use by the gaseous diffusion plants at Oak Ridge, Tenn., and Paducah, Ky.; the evolution of our current power contract arrangements; the effect the cost of the excess contract demands has on our production costs; and finally, the actions we have taken in an attempt to get relief of the excess demand charges.

Contract demand is the amount of capacity, expressed in kilowatts, that the power supplier is obligated to furnish at any time and which DOE is obligated to pay for, whether or not it takes the energy. Excess demand is the amount of this capacity DOE will not need. Thus, DOE pays a demand, or capacity, charge for the excess contract demand but is not required to take or pay for the energy.

As you know, the Department has three gaseous diffusion plants for enriching uranium for the domestic and foreign civilian nuclear power industry and for the Government's use. These plants were constructed by the U.S. Government and are still Government-owned facilities. They are located at Oak Ridge, Tenn.; Paducah, Ky.; and the Portsmouth plant at Piketon, Ohio. TVA serves Oak Ridge and part of Paducah's requirements; Electric Energy, Inc., serves the remainder of the Paducah load; and the Ohio Valley Electric Corp. serves Portsmouth.

The gaseous diffusion plants were constructed in the 1940's and 1950's to satisfy the military requirements for highly enriched uranium. In the early 1960's, as the military demands for enriched uranium declined, and prior to the buildup of the needs of the civilian nuclear industry, the three plants changed operations to very low production levels by reducing their electrical loads. Contract demand reductions were negotiated with EEInc., OVEC, and TVA.

In the late 1960's, when the nuclear power forecasts indicated that future needs for uranium enrichment far exceeded the capacity of the three plants, long-term power contracts were negotiated with EEInc., OVEC, and TVA to restore production at the three plants to full capability. In 1972, to further increase enriching capacity, it was decided to embark on programs to increase the efficiencies of the three plants and to increase their capabilities to utilize electric power. These programs were referred to as the Cascade improvement program and Cascade uprating program. They were completed in 1983, thereby increasing the capacity of the three plants by 59 percent to a total capacity of 27.3 million SWU.

Following the decision to pursue CIP and CUP in 1972, negotiations were held with EEInc. and TVA to further increase the contract demands under the contracts.

In 1975 the nuclear power forecasts still indicated a dramatic increase for the need for uranium enrichment services. The Federal Government therefore decided to build additional enrichment capacity which would be located adjacent to the existing Portsmouth gaseous diffusion plant. In 1977, the decision was made to change from gaseous diffusion technology to the less electric power intensive gas centrifuge technology for the Portsmouth add-on plant.

As you will note, appended to my testimony is a chart entitled "Comparison of Total Nuclear Power Forecast" which shows the drastic reduction in nuclear power growth projections made between 1967 and 1982 from data provided by the electric utilities. Projections in the early 1970's indicated that by the year 2000 there would be about 1,700 GWe installed in the free world, which would be served by the U.S. enrichment plants. The 1982 forecast shows a projection of only 200 GWe for which DOE would furnish the enriching services.

The reduced DOE market forecast is the result of a switch to other forms of generation, deferrals, and cancellations of nuclear plant construction, and the emergence of competition of foreign enrichers.

Deferrals and cancellations of nuclear power units and decisions to install nonnuclear units were caused by increased building costs, licensing delays, financial difficulties of the utilities, and lower electrical growth projections, based on actual data for the past few years.

Foreign enrichers have also captured a major portion of the non-U.S. market. Whereas the United States used to supply 100 percent of that market, we now expect the United States to have only a one-third share.

We attribute much of that market loss to the United States not having a competitive price for enriching services and to the desire of foreign utilities to diversify their sources of supply. The DOE enrichment market has also been reduced by the evolution of a secondary market in which enrichment customers, faced with the prohibitive cost of carrying unneeded SWU's in inventory, sell the enrichment commitments on the open market at discounted prices. This development has resulted in lost sales to both domestic and non-U.S. customers.

As early as 1977, the reduced nuclear power forecast began to affect our decisions for meeting the future enriching requirements and demands. By the late 1970's, slippages in the utilities' nuclear power programs indicated that the 1980's would not require as much enriching services from the gaseous diffusion plants as previously projected, and we began making short-term downward adjustments in enriching by reducing the power loads at the gaseous diffusion plants. All three suppliers—EEInc., OVEC, and TVA—were able to utilize the power during that short adjustment period and did grant contract demand reductions.

In 1980 it was apparent, however, that the utilities would have long-term reduced needs for enriching services, and the Department entered into discussions with the power suppliers for corresponding long-term power contract reductions. TVA would not grant contract demand reductions because of a lack of market for

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the excess power due to excess capacity on its on-system and the glut of capacity on those systems surrounding it.

Continued reduction in nuclear power growth projections resulted in the DOE 1981 long-range uranium enrichment plan indicating that it was unnecessary to have full operation of the gaseous diffusion plants in the 1990's. Therefore, DOE exercised its rights under the TVA contracts to reduce the contract demands by 1,000 MW, the maximum permissible during any 12 calendar months. That reduction becomes effective in 1989 after the required 8-year prior notice.

Again in 1982 a second notice was given for an additional 1,000-MW reduction to take place in 1990. DOE is presently studying the possibility of further contract demand reductions that could take place in 1991. The excess contract demands, together with the estimated costs, in terms of 1984 dollars, are shown on a chart which is part of my prepared statement entitled "TVA Contract Demands."

DOE studies indicated the appropriateness of further TVA contract demand reductions; consequently, a notice was given to TVA on December 23, 1983, for an additional 1,000, MW-reduction to be effective December 24, 1991, the earliest date permitted by the contract. The action taken subsequent to the November 14, 1983, hearing to target an additional 1,000 MW of TVA power on December 24, 1991, should be reflected on the line representing the contract demand and load on December 24, 1991. That number should be changed to 1,485 MW on that date.

Since the Department could not reach agreement with TVA on a reduction in the contract demands for the near term—that is, the 1980's—we explored with them other possible ways of achieving capacity charge relief. The alternatives proposed were, first, the transfer of the power from TVA to municipal electric utilities outside the TVA region. TVA representatives would not agree to this proposal because they said that such an action would violate the TVA Act which limits its ability to be a direct or indirect source of power outside the TVA area. In the discussions with TVA, it was pointed out that DOE would take title to the energy and DOE would be the supplier, thus avoiding problems under the TVA Act. However, TVA would not agree to pursue the proposal on that basis because it felt it could still be perceived as an indirect supplier of power outside its service area.

A second effort was, the Department proposed to TVA and to other utilities that a small portion of the power under contract at Oak Ridge or Paducah be assigned to strategic petroleum reserve sites in Louisiana and Texas. These discussions are ongoing.

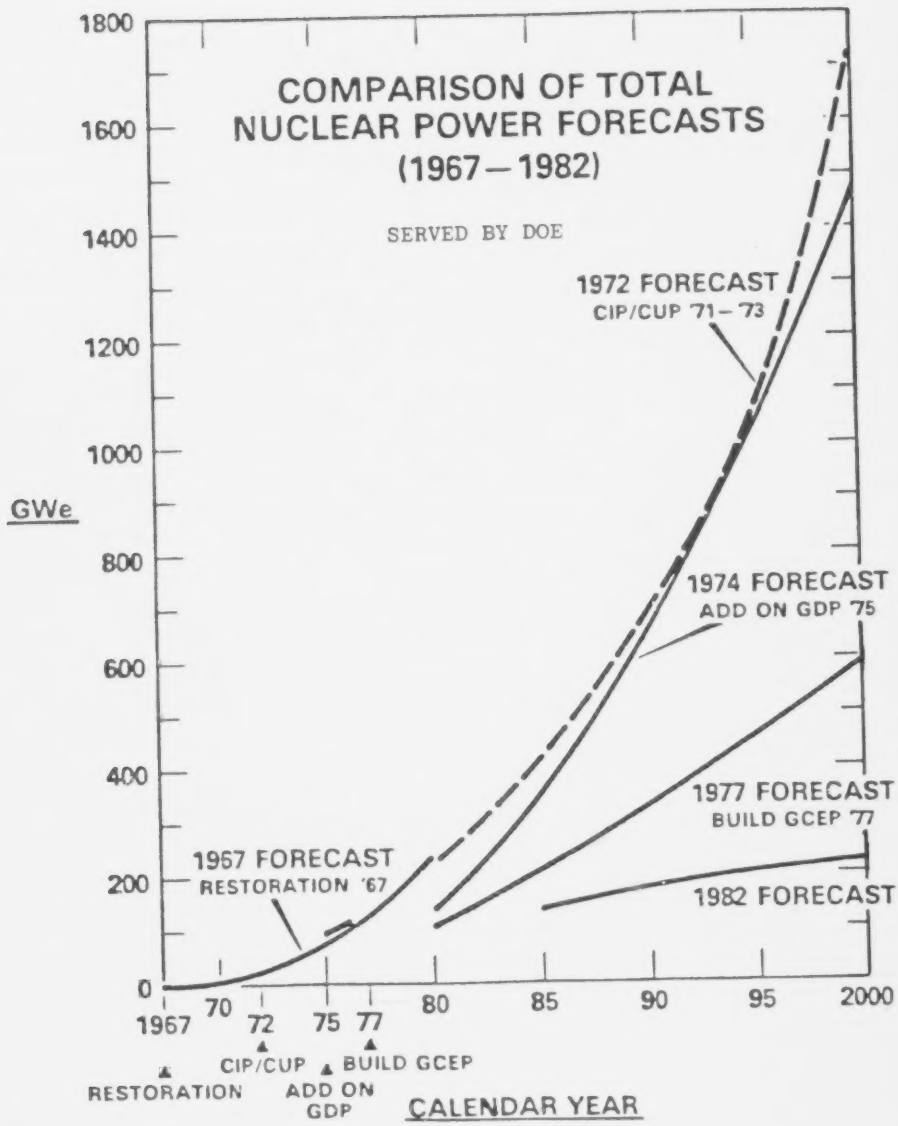
Third, the Department proposed to TVA that the excess power be sold to neighboring utilities. This proposal was not feasible because of excess capacity on those systems.

It should be noted, in closing, that with regard to the proposals to dispose of the excess TVA power for use in areas outside the TVA area, it was concluded that there is no substantial legal impediment to such disposition other than the contractual requirement that TVA consent to such disposition. It is my judgment that there is a common ground between DOE and TVA to try to solve this issue to the benefit of all parties, including interested utilities

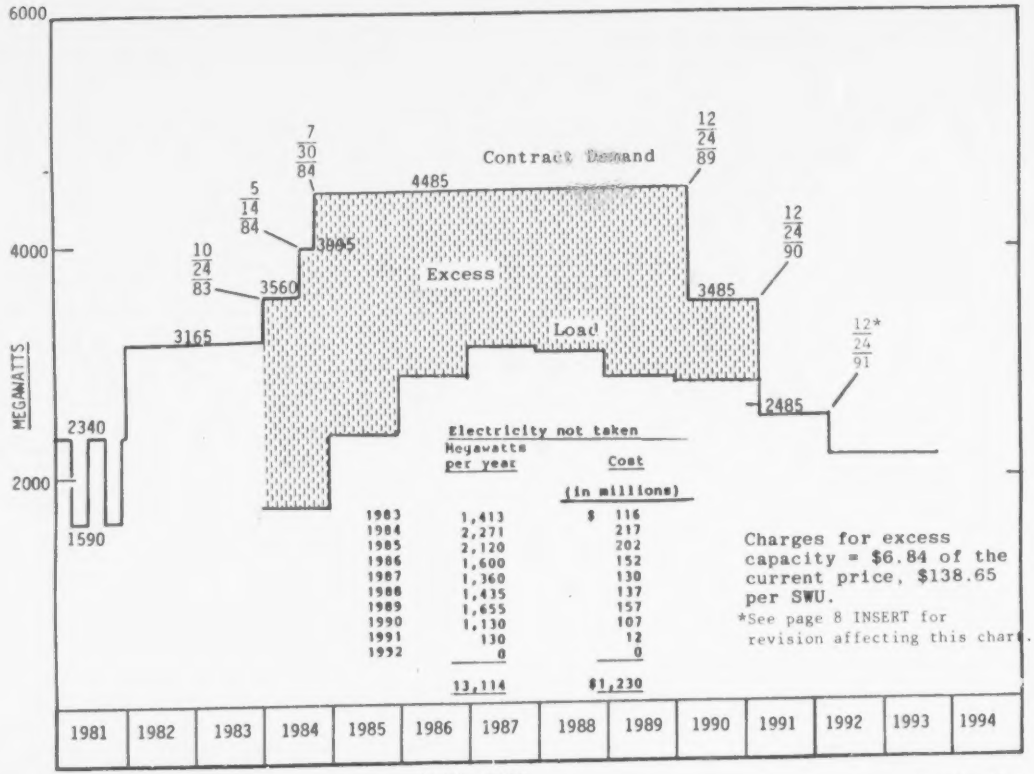
outside the TVA region, and DOE's enrichment customers, and I am committed, along with others in the Department, to working toward that goal.

That concludes my statement, Mr. Chairman. I will be happy to answer any questions you may have.

[The charts attached to Mr. LaGrone's statement follow:]


COMPARISON OF TOTAL
NUCLEAR POWER FORECASTS
(1967—1982)
SERVED BY DOE
1800
1600
1400
1200
1000
800
600
400
200
0
GWe
1972 FORECAST
CIP/CUP '71—'73
1974 FORECAST
ADD ON GDP '75
1977 FORECAST
BUILD GCEP '77
1982 FORECAST
1967 FORECAST
RESTORATION '67
1967
70
72
75
77
80
85
90
95
2000
RESTORATION
CIP/CUP
ADD ON GDP
BUILD GCEP
CALENDAR YEAR

TVA CONTRACT DEMANDS (MW)



Electricity not taken

	Megawatts per year	Cost (in millions)
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1984	2,271	217
1985	2,120	202
1986	1,600	152
1987	1,360	130
1988	1,435	137
1989	1,655	157
1990	1,130	107
1991	130	12
1992	0	0
	13,114	$1,230

Charges for excess capacity = $6.84 of the current price, $138.65 per SWU.

*See page 8 INSERT for revision affecting this chart.

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Senator HUMPHREY. Thank you, Mr. LaGrone.
Let's now ask Mr. Parris for his statement.

STATEMENT OF HUGH G. PARRIS, MANAGER, OFFICE OF POWER, TENNESSEE VALLEY AUTHORITY, KNOXVILLE, TENN., ACCOMPANIED BY HERBERT S. SANGER, JR., GENERAL COUNSEL, TVA

Mr. PARRIS. My name is Hugh G. Parris. I am manager of Office of Power for the Tennessee Valley Authority.

I am glad to have this opportunity to provide information about the long-term contractual arrangements, including those with the Department of Energy, under which TVA makes available electric power to customers having large loads. The operational and economic bases for these arrangements are closely related to the legal bases for them. Herbert S. Sanger, Jr., is here with me and will discuss the legal aspects of these arrangements.

TVA, consistent with its statutory responsibilities, supplies power at wholesale to 160 municipal and cooperative distributors in Tennessee and parts of 6 other States for resale to domestic, commercial, and industrial customers. In addition, TVA provides power directly for a number of large industries having very large or unusual loads, as well as several Federal agencies, including the DOE atomic energy facilities at Oak Ridge and Paducah.

As a supplier of power, TVA's objective is the advancement of the national defense and the physical, social, and economic development of the area in which it conducts its operations by providing that area with an ample supply of electric power at the lowest feasible cost. Thus, TVA considers its electric power system to be for the benefit of the entire area it supplies. Individual customers are not served from individual generating plants. Instead, all of TVA's power goes into what is in effect a common pool, and all of TVA's customers are supplied from that pool.

It now requires on an average 10 to 12 years to construct and place in commercial operation large steam generating units. TVA thus must plan years ahead to match system capacity with loads and must continually have under construction the capacity to meet projected growth in both existing and new loads.

These generating and other facilities require tremendous investments of money. The investment per revenue dollar is much larger in the electric industry than in most others. Most of this investment is, of course, made long before the generating plant and related facilities are available for use, and the fixed costs on them continue and must be paid throughout their life, which is approximately 35 years, whether or not those who contract for electricity ever use the amounts for which they contracted.

In serving directly customers with large loads, TVA enters into availability contracts. Under an availability contract, TVA agrees to make available continuously for the term of the contract the specified voltage and frequency at a specified delivery point, such as a substation. The maintenance of such voltage and frequency constitutes availability of the power and energy for which the customer agrees to pay. The amount of power which the customer requests and TVA is responsible for providing under the contract is generally expressed in kilowatts and is the customer's contract

demand under the contract. While the customer can use this available power to whatever extent he wishes, TVA must at all times, except for force majeure, make available firm power in the amount specified in the contract.

The minimum payment obligation is a customary and important part of the rate structure because a large part of the cost of serving a customer is independent of how much power the customer uses and depends instead on how much power the customer has asked the supplier to have available for the customer.

TVA has long sought, in designing its rates, to reflect costs of service. The minimum payment obligations under TVA's industrial rates are an integral part of that effort, taking into account as it does the capacity needed to serve large industrial loads and the fixed costs: Interest, depreciation, operation, maintenance, and administration associated therewith.

If a large customer were to discontinue taking power or cut its actual use far below the amount TVA is required to make available under the contract, TVA, unless protected by minimum payment obligations, would suffer a substantial loss since the capacity provided to make the power available would not be used for the purpose intended. This loss would result in higher rates that would affect other customers because TVA is a nonprofit entity whose customers' rates are directly related to the cost of serving them.

The extent of that loss and rate increase would be difficult or impossible to determine precisely at the time of entering into a contract because TVA cannot know if or when such curtailment or termination of use may occur, what the amount of any curtailment may be, what the economic conditions may be at the time or thereafter, and what the situation may be with respect to other customers' loads at the time or thereafter.

Therefore, in establishing rate schedules, including minimum payment requirements for the availability of power, the electric system must take into account the average conditions which can be expected for customers such as the large industrial customers. If the large industrial customers were to avoid minimum payment obligations, the resulting shortfall in revenues needed to cover fixed costs could only be made up by increasing rates generally applicable to ratepayers.

For large loads, the appropriate level of minimum payment obligations is measured by a reasonable appraisal of the average impact of all the highly varied conditions, favorable and unfavorable, that could occur over the years in serving customers with such loads.

In light of such uncertainties, TVA in initially entering into a contract with a customer having a large load will only do so on the basis of a contract extending at least 10 years. This assures that TVA, through the minimum payment obligations for the term of the contract, will be able to recover at least a portion of the fixed costs incurred in providing facilities necessary to provide the amount of power requested by the customer.

TVA's fixed costs, of course, continue for the life of its equipment and facilities, generally about 35 years, which is much longer than the term of its power contracts. TVA thus bears the risk of having to carry those fixed costs if other system loads do not increase suffi-

ciently to pick up loads of customers which do not renew their contracts or which do renew them for substantially reduced amounts of power.

To further assure that costs incurred in constructing and maintaining facilities to serve a large load at a particular location are not unfairly shifted to other ratepayers, the power contracts provide that the electric power under the contract is made available for use at that particular location. The contracts do not permit transfer or resale of the power by the customer for use at some other location. If an existing customer, because of changed circumstances, were to transfer power to a different facility or customer, this would be replacing sales that TVA, in carrying out its power supply responsibilities, was prepared to make available as a result of its planning and substantial investment in facilities. Consumers throughout the area would then have to absorb the fixed cost of those unused facilities through higher electric rates.

Moreover, to the extent that TVA might at times be able to find a market for any power that an industrial customer may not then be using under its contract, this will provide some additional funds to help cover fixed costs, particularly those continuing after the expiration of power contracts, incurred in providing the facilities to serve the industrial customer.

Large load customers, including DOE's predecessor, AEC, when contracting for power for the Oak Ridge and Paducah facilities, have understood when entering into their power contracts that the power made available under the contract could not be resold and that in the event of reduction in use at the customer's facilities there would be continuing minimum payment obligations for the term of the contract, even though TVA, prior to the expiration of the contract, might find a market for any of the power not being used.

The conditions now existing as a result of the current, as well as projected, operational cutbacks, including substantial reductions in the amounts of power being used, at DOE's atomic energy facilities are a very real life demonstration of the absolute necessity for minimum payment obligations continuing for the contract term. TVA has expended exceedingly large sums to provide system facilities adequate to supply the amounts of power requested by AEC and set out in the Oak Ridge and Paducah contracts. Under those contracts, a total of 3,560 megawatts is now available for use at DOE's Oak Ridge and Paducah facilities; and under amendments requested by AEC and entered into in 1974, the amount of power to be made available increases in steps in 1984 to a level of 4,485 megawatts.

To help put this in proper perspective, TVA, in order to make this amount of power available, including necessary capacity reserves, must have the equivalent of five large nuclear units. Projected costs for such units range from $1 to $3 billion for each unit or a total of $5 to $15 billion. Obviously, the fixed costs TVA has incurred in providing facilities to make available the amounts of power requested for these facilities will continue even though DOE may use less power as a result of operational cutbacks. Without the minimum payments by DOE, these fixed costs incurred in provid-

ing capacity to serve DOE's facilities would have to be recovered from other consumers through higher rates.

If TVA were to relieve DOE of its contract obligations, as has been suggested, and these lost revenues were recovered from the class of large industrial customers in the TVA region, it would necessitate an increase in charges of about 14 percent.

Moreover, if DOE were to be relieved of its payment obligations, there are many other customers with large loads who are in similar situations and who would expect and demand that they too be relieved of minimum payment obligations they are now making. As a result of poor economic conditions, numerous other customers with large loads are operating at substantially reduced levels in the TVA region. Again, if this were to occur, it could only result in further improper shifting of costs to other consumers through higher rates and mean that the rate increase for industrial customers referred to above would be higher than 14 percent.

The risk of being unable to recover through additional sales of power fixed facility costs continuing after the expiration of a contract that is not renewed has been magnified further by the fact that growth in electric power loads are now projected to increase by somewhere between 1 and 2.5 percent per year. This is quite a contrast to the annual 6- to 8-percent load growths that were being projected at the time TVA entered into the contracts to supply power for the Paducah and Oak Ridge operations.

In light of such circumstances, the economic necessity for the contractual arrangements that provide some protection to TVA's other customers for investments made on the basis of a firm contract with DOE is quite apparent. The DOE obligation to TVA involves not only a firm commitment but one that is backed by reasons of equity to our other customers.

I appreciate this opportunity to describe the arrangements under which TVA makes power available and why it would be inappropriate to relieve DOE of its obligations. Mr. Sanger will now comment on the legal aspects of such agreements.

Senator HUMPHREY. We will be happy to take Mr. Sanger's statement for the record. We have not listed him as a witness. Because of the constraints of time, I will not invite him to present that. If that concludes your statement, Mr. Parris, we will ask Mr. Thorington for his statement.

Mr. PARRIS. Yes.

STATEMENT OF ROBERT THORINGTON, COUNSEL, ALABAMA MUNICIPAL ELECTRIC AUTHORITY, ACCOMPANIED BY ROBERT C. McDIARMID

Mr. THORINGTON. Mr. Chairman, I am Robert Thorington. I am here today to reflect the positions of the Alabama-Mississippi municipals in regard to their interest in the DOE-TVA excess energy that is presently not being used by the DOE at its uranium enrichment facilities at Oak Ridge. I would like leave to supplement my oral statement here today with a written statement following this meeting reflecting the positions of these municipals and their interest.

The municipals in Alabama and Mississippi began their interest in this power in October 1981. At the present time, today, we still are manifesting an interest.

I think that our interest has been of assistance both to DOE and TVA in that they finally have come to the conclusion, as reflected by Mr. LaGrone, that there are no substantial legal impediments to the disposition of that power and the only thing standing in the way is the consent of TVA.

When we first began reflecting our interest in access to this power, we were told that section 44 of the Atomic Energy Act presented an impediment to our having access to this energy. At the House subcommittee hearings in March 1982, in oral testimony, this was reflected as an impediment. That testimony was subsequently corrected to say section 44 was not an impediment.

So it seems that each time you have a straw man appear, whether it is section 44 or whether it is section 15(d) of the TVA Act, through the cooperation of our legal counsel and others we have been able to prevail on the point that we do not have problems in this area from a legal standpoint. So I think that there is no question but that TVA can hold DOE to its capacity charge, but we don't feel that this prevents TVA from cooperating with DOE to make this power available to other parties that are interested in power so long as you don't have a violation of any legal statutes that might exist. And in our opinion, there is no legal impediment, and this has now been concurred in by DOE.

The bottom line of all this is that we feel that the problem has not been resolved today because it has not been pursued with diligence at the Secretary's level at DOE or at the TVA Board level, that if it was pursued with diligence at those higher levels within these two agencies, that this problem could be resolved and should be resolved from the standpoint of the taxpayers and from the standpoint of national security to the extent it is dependent upon the uranium enrichment services that are provided by the Department of Energy.

This concludes my statement. I certainly would be available to answer any questions that you might wish to ask.

Senator HUMPHREY. Thank you, Mr. Thorington.

Senator Domenici, do you have an opening statement?

Senator DOMENICI. No opening statement. I would like to ask a question.

Senator HUMPHREY. All right, fine. Are you in a hurry?

Senator DOMENICI. No, I am not. Let's proceed as you see fit. If I need some time, I will ask you. Thank you, Mr. Chairman.

Senator HUMPHREY. Mr. LaGrone, you make the point that whereas the United States once provided 100 percent of the SWU market, we are now expected only to have a one-third share. Why is that significant?

Mr. LAGRONE. It is significant in terms of loss of balance of payments, for one thing. It is significant from the standpoint of the United States not retaining a leadership role in a high technology area where we are the people who conceived that technology, that developed that technology, and now see others moving out aggressively. But it is especially significant in terms of the economic impact, balance of payments, job opportunities, and the health of

the nuclear industry in this country. All of those factors come into play.

Senator HUMPHREY. What percentage do we have now of the market?

Mr. LAGRONE. We are running at about a third.

Senator HUMPHREY. We are down to a third?

Mr. LAGRONE. Yes, sir.

Senator HUMPHREY. Do you expect that to fall further?

Mr. LAGRONE. That is difficult to judge because at the present time there are several millions of separative work units on the market available through the secondary market. The owners of the excess SWU's can undersell any of the primary producers. So we expect there could be some further erosions in that area.

Senator HUMPHREY. Let's get to the real thorny problem, and that is how we get out of this unacceptable situation involving the assessment of charges against the Department of Energy, that is the taxpayers, for which they receive nothing practical in return. The Department of Energy is willing to take title, take possession, whatever, of the electricity produced by this capacity and sell it to other interested parties. Is that correct?

Mr. LAGRONE. We believe that is a possibility. We believe that could be done, to make that power available to others. We also understand TVA's position with respect to their having in essence a veto right over our ability to resell that power since they feel it would be a violation of their act and put them in a position of being the direct or indirect supplier outside of a service area. We, however, take the view that through negotiations, through discussions, we can effect arrangements whereby that power could in effect be sold to service areas which are relying on let's say oil or gas production today that is more expensive than the power coming out of that area.

Senator HUMPHREY. You believe that can be done? Is DOE anxious to do that? Apart from the theoretical, practically speaking, is DOE anxious and prepared to do that, if a way can be found to facilitate that?

Mr. LAGRONE. The answer to that is yes.

Senator HUMPHREY. Mr. Parris, DOE feels that if it takes title to that electricity and sells it, that it would not be a violation of the statute. You disagree with that?

Mr. PARRIS. Yes, sir, we do. And Mr. Sanger might be able to address that more directly.

Senator HUMPHREY. Yes, sir. He is welcome to offer his expertise at any point.

Senator DOMENICI. Mr. Chairman, could I ask a question?

Senator HUMPHREY. Certainly. Yes.

Senator DOMENICI. Am I reading this correctly? You keep saying the taxpayer is paying this charge. Now I am not expert in this area, but I understand the enrichment users are paying the charge. The taxpayer isn't. Am I missing something here?

Senator HUMPHREY. Well, the Department of Energy is, in fact, already paying to TVA demand charges, to pay TVA for building the capacity to generate electricity, which DOE now feels it does not need and doesn't want to accept, so we are paying cash to TVA.

It is a take-or-pay situation. You understand that, from your part of the country. We are not taking it; we are paying.

We are trying to find a way to get around that problem.

Mr. LAGRONE. On Senator Domenici's point, however, you are correct. There is an increment that is included in the cost of SWU which is about $138, and the amount that is reflected with the excess capacity charge is about $6.84, in that neighborhood. So that increment is included.

Senator HUMPHREY. That is quite correct, with respect to the enrichment units. There is an increment of extra cost, which is why we are no longer competitive and losing the market to foreign suppliers.

Senator DOMENICI. Wait a minute. What is the complaint, that our uranium enrichment capacity is no longer competitive or that taxpayers are paying this charge for capacity that was thought to be needed like everybody else that needed extra capacity? Which is the issue we are discussing?

Senator HUMPHREY. The answer is both, frankly. But I am most concerned about the costs to the taxpayer represented by these demand charges DOE is paying TVA for electricity, the delivery of which we are not taking.

Senator DOMENICI. But, Senator, what I am trying to find out is; is that charge not going to be paid by the uranium enrichment user, the charge you are referring to, excess capacity advance, which not only DOE pays but all the other industrial people pay? Is that not correct? There are others who are paying that charge.

Who is here from TVA that can answer that?

Mr. SANGER. Yes, sir. That is correct. Every industrial customer has a minimum bill obligation.

Senator DOMENICI. Then use the right words, the minimum bill obligation. Who knows the facts from the DOE standpoint? Are they going to be paid by the uranium enrichment users or the taxpayers?

Mr. LAGRONE. We sell separative work unit services at about $138. In that $138 there is an amount we have added for the capacity, excess demand charges. As I said, that figure comes to about $6 and 80-some-odd cents today.

Senator DOMENICI. Are you being evasive or are you giving me the answer?

Mr. LAGRONE. I am giving you the answer, sir.

Senator DOMENICI. Does that amount of money pay the capacity charge that the Senator is asking about at $6 and something?

Mr. LAGRONE. Yes, sir. That is where it is derived from. Then it is apportioned out into the contracts.

Senator HUMPHREY. So you are saying that the Department of Energy recoups its demand charge in the form of higher selling prices for the SWU's; is that correct?

Mr. LAGRONE. Yes, sir. That charge is put back in.

Senator HUMPHREY. Now that is sold to, among others, American utilities; is that not correct?

Mr. LAGRONE. Correct.

Senator HUMPHREY. Then ratepayers are having to pay more for electricity, I would point out. So costs are always assessed.

Mr. LAGRONE. It does have an ultimate impact.

Senator HUMPHREY. Ultimately costs are always assessed to individuals. So we can't hide behind this theory that utilities are making up this $1¼ billion over the next 10 years we are proposing to pay for nothing.

Mr. LAGRONE. We are making no attempt to hide behind the theory, but are just stating the facts of how we build up the cost, how we recover, and how they are apportioned.

Senator HUMPHREY. The point is DOE is going to spend $1¼ billion for electricity for which it will not take delivery in the next 10 years. It will recoup that amount by jacking up the price, necessarily, of the SWU's of utilities, some of which are American. That means higher electricity rates for ratepayers. Is that correct?

Mr. LAGRONE. It would have that impact.

Senator HUMPHREY. We could lower that if we could find some way of disposing of that electricity; is that not correct?

Mr. LAGRONE. That is correct, if we follow the course of reason. The $1.2 billion represents what it would be, based on the last forecast.

Senator HUMPHREY. We just don't want you people to think the utilities are going to absorb the $1¼ billion and that is a wash. It isn't at all. It is going to be assessed to ratepayers in this country, among others.

Excuse me, Senator.

Senator DOMENICI. Let me suggest you change the chart. There aren't any tax dollars in that. It ought to be consumers there. Put that in perspective, that we ought to put that charge into what is it going to be on someone's bill. I surmise it is going to be in the pennies.

Senator HUMPHREY. Nonetheless, pennies add up to a great deal of money.

Senator DOMENICI. Right. And I am not for wasting them.

Let me ask another question here. The point is that we ought to not make our uranium enrichment noncompetitive, if I understood the question. Has anybody done a study on that to enlighten the committee on whether this charge that you are talking about is making enriched uranium noncompetitive? I understand there is a great deal of dumping occurring in the United States today by the Italians and French and others of enriched uranium. Who is the expert on that?

Mr. LAGRONE. I don't represent myself as an expert here, sir. We have some people here far more expert in that area.

The point is because of our pricing structure, yes, the secondary market, represented by the Italians, the Spanish, the Mexicans to some degree, and then the primary production out of the French, Eurodif, and to some extent Urenco, although smaller in capacity, have been able to penetrate the U.S. market. You are right.

Senator HUMPHREY. Senator Domenici, if you will permit me, I am making available today a GAO study done at my request, and you are welcome to have a copy if you haven't one already, which shows, according to the GAO, that the SWU charge presently is $138 per unit and would fall to $121.16 if DOE would not have to bear the burden of paying for this electricity on which it will not take delivery.

Senator DOMENICI. Senator, I would be glad to look at it. I don't think that is what it says, but I am not going to argue with you today.

I have one more question. Then I have to go to another hearing. But I appreciate your giving me an opportunity.

This take-or-pay provision, do I understand that this is a normal way of doing business? It is not something that we are doing just for DOE?

Mr. SANGER. It is included in every power sales contract we have, Senator.

Senator DOMENICI. Do we have private firms that have this contract?

Mr. SANGER. Many private companies, yes.

Senator HUMPHREY. Will the Senator yield?

Senator DOMENICI. Just one more question and then I will not only yield but I am through.

Do other utilities have them?

Mr. SANGER. Other utilities have such provisions, yes.

Senator DOMENICI. If you got rid of them, who would have to pay to pick up the tab? Where would that money come from?

Mr. SANGER. TVA ratepayers, primarily the residential consumer, if we relieve the large users such as DOE and the large industries of this bill. These are fixed costs that TVA has already incurred. If TVA were not able to collect these costs from the consumers, from the large consumers, TVA would have to collect them from the residential consumers.

As you know, from our statute, TVA is required to charge rates to cover all of its costs. We get no appropriations, no tax dollars for our power program.

Senator DOMENICI. I am just going to close by saying I don't know which way is the right way to go, but I have gone through a number of these. I understand we could go over and look at Ohio and say, they are getting a great bargain on electricity there. Why are we paying so much somewhere else. The only thing is you will find they have the dirtiest coal-burning plants in America. They haven't even complied with SIP yet in Ohio. Of course, if they have to bring those into compliance, they have to raise the rate. They have been avoiding the process for 12 years. If they had to comply with the acid rain requirements, pretty soon their rates would be up.

So I don't think we just look at one set of comparisons on utility rates. You have to look at what is being delivered to people in that area, what are they getting, why did it cost so much, who asked for the capacity, is it new, is it old, do they have the best technology on cleanup, and the like. So I will be interested when we proceed.

I thank the Senator for yielding.

Senator HUMPHREY. If the Senator could remain for just a moment, I would point out with respect to these take-or-pay contracts, they are not sacrosanct. It happens that the other two utilities DOE deals with in the enrichment program, namely OVEC and EEInc., out in the Midwest, have largely, if not completely, relieved DOE of the take-or-pay provisions it had in its contracts with those utilities.

Senator DOMENICI. Yes, Senator, I am familiar with them. I think the situation there was one that it was mutually beneficial. I think that is a nice way to get out of take-or-pay. If we do that with natural gas, we could just solve all the supply-demand problem, and we would abrogate all the contracts in the country on take-or-pay. But if the supply and demand within that particular region don't mesh, it is a pretty tough thing to mandate doing away with contracts, whether it is this or other contracts.

Senator HUMPHREY. Well, I find it ironic that this utility called TVA, which was built and paid for by the taxpayers, either directly or through privileged financing through the Federal Financing Bank, is holding us to every word and letter of the contract, and yet private utilities have seen fit to give us some latitude.

Mr. LAGRONE. If I could offer one comment, Senator.

Senator DOMENICI. Just a moment. Let me say to my friend, Senator Humphrey, as indicated, I would just like to make sure we understand all sides of it. You may end up being right. At this particular moment I don't think you are. But I certainly can be educated, and perhaps I am completely wrong.

Senator HUMPHREY. I am sure the Senator will join me in wishing that some way could be found to eliminate this wasteful situation in which the Department of Energy is paying for electricity on which it will not take delivery and passing that cost on in this case to ratepayers, if it doesn't choose to jack up its SWU prices, or to the taxpayers, if it wants to be more competitive in that market.

Senator DOMENICI. Well, I would like to make sure that if they don't take and pay, that ultimately the enrichment process will pay for that, even though they are having to pay now for a non-take.

Senator HUMPHREY. Yes.

Senator DOMENICI. And I don't think anyone, except uranium enrichment users, are paying it. Then the issue becomes one of whether that is a fair economic situation for uranium enrichment or not and whether utility people are paying too much because of that and whether we are losing a market because of it. But it certainly is not as simple as the taxpayers are paying for it or take-or-pay is the problem. There are some other collateral issues you might be right on.

Senator HUMPHREY. You are right, it can be passed on to ratepayers if DOE chooses to jack up the SWU prices. We have lost the market from 100 percent down to a third, and I guess it is not falling. If they don't choose to do that, then the taxpayers are going to be paying that. It seems to me highly wasteful to do it on that basis.

Senator DOMENICI. He had a comment and I interrupted him, Mr. Chairman.

Mr. LAGRONE. Thank you, sir. The comment I wanted to make is, in our judgment, it does not necessarily have to be a winners-losers situation; that is, we dump and walk away from the take-or-pay contracts and the ratepayers and the TVA systems have to suffer with that. That is not equity. We do not want that.

Rather, what we are seeking to look at is the world of the eighties, and that is radically different from the era in which these contracts were written; we are seeking some mechanisms whereby

some of this power can be sold and thereby eliminate some of the burden that we are having to bear in the enrichment area. That is the area I think that is of the greatest opportunity for exploration with TVA.

I came to Oak Ridge about 6 months ago. Mr. Willis is the new general manager down there. I think our chemistry is such and our viewpoints are such, and I am not speaking for him, but I think there may be some opportunities for us to sit down and talk about it in light of a new day and new realities. That is all I am suggesting.

TVA does have a legitimate legal problem. We have a serious business problem. We are looking for a common situation where we can work together.

Senator DOMENICI. Thank you very much.

Mr. THORINGTON. Mr. Chairman, may I supplement Mr. LaGrone's statement?

Senator HUMPHREY. Certainly.

Mr. THORINGTON. Alabama and Mississippi municipals are interested in taking the power so TVA doesn't have a loss and DOE does not have a loss to the extent they have need for that capacity.

Senator HUMPHREY. I understand that. On that score, Mr. LaGrone, if a way could be found to sell this electricity to those utilities that have expressed an interest and whom Mr. Thorington represents, what effect would that have on these demand charges? I mean how large an effect would that have in reducing DOE's obligation to pay TVA these demand charges?

Mr. LAGRONE. It would depend on the amount of power that could be sold, obviously. I am sorry to give you a hedge answer. It is not intended to be. We include $6 and some-odd cents in our present price per SWU. That would be affected, ultimately in a positive fashion, by the amount of power that could be sold and over what period of time.

Senator HUMPHREY. Mr. Thorington's clients have expressed an interest in a 5-year contract; is that correct?

Mr. THORINGTON. Through 1992.

Senator HUMPHREY. Have you expressed that in terms of how much power you would buy?

Mr. THORINGTON. It has been to DOE, yes.

Senator HUMPHREY. Does DOE then not have some means of calculating the effect of the offer on the demand charges?

Mr. LAGRONE. Sir, I have not had this discussion with Mr. Thorington. But the answer to your question is yes, obviously we would have a way of calculating that. We could submit that kind of information for the record. I would prefer to do that instead of giving a hip-pocket guess.

Senator HUMPHREY. You mean it hasn't been calculated? You have a bona fide offer here. You are worried about paying out one and a quarter billion dollars. You haven't made that calculation?

Mr. LAGRONE. I met Mr. Thorington today for the first time, sir. He may have talked with others in the Department, but he and I have not had this discussion.

[The following information was subsequently supplied:]

The calulated effect of the offer by utilities represented by Mr. Thorington cou. reduce the demand charges by as much as $27 million per year for 300 MW. If DOE

had been able to contract to sell the excess capacity to those utilities for approximately seven years, until contractual relief under the DOE/TVA is possible, DOE could save up to $189 million.

Senator HUMPHREY. Based on some of the letters I have seen between Mr. Thorington's firm, I believe, and DOE, he has been talking to a lot of people. That is the problem. They keep talking to a different person and they can never seem to talk to anybody who can make a decision.

What about the potential beyond the utilities represented by Mr. Thorington's firm? What about the possibility of other utilities? Now I know TVA is not supposed to be competitive with private utilities in that vicinity, but beyond that, has DOE investigated the potential for other sales beyond the sales to clients represented by Mr. Thorington?

Mr. LAGRONE. As I mentioned, we are looking at transferring a small amount of power, or having available a small amount of power, on the order of 70 megawatts of power, available for the strategic petroleum reserve down in Louisiana and Texas. Beyond that, and the discussions that Mr. Thorington has raised, I am not aware of other efforts.

Mr. THORINGTON. Mr. Chairman?

Senator HUMPHREY. Yes.

Mr. THORINGTON. I think you should know that because of the 18-month delay we have incurred in trying to get something moving in that direction, one of the parties represented, Jacksonville Electric Authority in Jacksonville, Fla., is no longer available because they could not wait any longer and had to find an alternative source, which they have.

Senator HUMPHREY. Did you have any other way of knowing if there were other utilities beyond those you represent that would be interested?

Mr. THORINGTON. My general opinion would be yes, they would be; perhaps in Virginia.

Senator HUMPHREY. Is your firm involved principally in utility matters?

Mr. THORINGTON. No, it is not.

Senator HUMPHREY. So you have no expertise to estimate other potential sales?

Mr. THORINGTON. That would be correct.

Senator HUMPHREY. Has DOE investigated that?

Mr. LAGRONE. I am not aware that DOE has investigated that, sir.

Senator HUMPHREY. I would think that DOE ought to be looking for a way to get rid of this electricity so as not to have to pay these demand charges for no purpose. That hasn't been done.

Mr. LAGRONE. The point is well-taken, sir. I think the first issue that needs to be resolved is a mutually beneficial agreement between us and TVA around our ability to take and market that power.

Senator HUMPHREY. Yes. Let's talk about that.

Mr. Parris, you feel that the statute prevents you from letting DOE sell this electricity.

Mr. PARRIS. Yes. Earlier we were going to let Mr. Sanger speak to this.

Senator HUMPHREY. We got sidetracked somehow.

Mr. SANGER. If the chairman please, we have looked over a period of time very diligently to see if there was some way where the minimum bill obligations of not only DOE but other directly served customers could be changed. We have not found any practical or business way to do that, except with TVA sustaining that cost, which TVA would then have to place on its other consumers.

While the statement has been made here today that there are no substantial legal impediments to doing this, I want to first emphasize that Mr. Parris' testimony deals with the practical business reasons why TVA would have difficulty with it because it would mean a cost to TVA. The second reason is our statute which originated in this committee said that TVA should not be directly or indirectly a source of power supply outside the area in which it is the primary source.

I think Senator Randolph, who is the ranking member of this committee and who was its long-time chairman, was fond of saying TVA should be a yardstick but should not be a walking stick. One of the very purposes of this statute was to keep TVA power from flowing to these municipal and other systems outside of our area who have as a source of supply private power companies.

I will assure this committee from litigation that we have had over this provision over the years that if any such effort is made, that we will be faced at the Federal courthouse with substantial legal questions and lawsuits over our ability to do this.

Senator HUMPHREY. Let me question you on two points you raise. You say if DOE disposes of this electricity to other customers through sales that that somehow represents a cost to TVA which you imply would be passed on to ratepayers. Is that a fair understanding of what you said?

Mr. SANGER. Yes. TVA, in building capacity, built capacity to meet the DOE loads and other loads. And as Mr. Parris pointed out, not only has DOE's load not grown, as DOE contracted for, but the other loads that TVA anticipated and for which it built capacity have not grown. So TVA itself has capacity that it wishes to dispose of beyond the DOE contract.

Senator HUMPHREY. Yes, we know that. But I still want to get at the essential matter of whether letting DOE sell the electricity which it owns as an alternative to paying the demand charges would somehow result in an increase in cost to TVA customers. I don't understand that. If DOE sells the electricity, purchases the electricity, how does that have any effect on the bottom line at TVA? Either you get the dough through demand charges or you get it through the purchase of electricity. Either way you get it. How does that affect the ratepayers of TVA?

Mr. SANGER. If there is a market out there for capacity, and we, Mr. Parris and I, have traveled that valley trying to find those markets, if there is a market, we have capacity and we would like to meet the loads ourselves.

Senator HUMPHREY. Of course. Sure, I understand that. I am glad you are operating in a businesslike fashion. You are still not answering my question. How does it matter to TVA ratepayers whether you get the money in the form of demand charges or you get it in the form of payment for the purchase of electricity?

Mr. SANGER. I don't really know of any other way to answer that question, Senator, except to say as a business proposition we have a product to sell and we would like to sell it.

Senator HUMPHREY. Good. I admire that. But I think your inability to answer the question I posed is an answer itself. It doesn't affect ratepayers. That is not a legitimate argument, in my opinion.

Mr. THORINGTON. Mr. Chairman, in that same regard, it would seem to the Alabama and Mississippi municipals that if TVA's insistence on the demand charge and insistence that DOE cannot market this power continues to prevail and thereby putting DOE out of the uranium enrichment business, that then TVA is going to have an even larger excess on its hands because DOE is not going to be buying any of this power after this contract expires.

Senator HUMPHREY. Well, they will still get DOE with demand charges, I suppose.

Mr. THORINGTON. No. It expires in 1992. What I am saying is in 1992 DOE is not going to be contracting with TVA because they will not have any need for the power.

Senator HUMPHREY. What about that consideration, TVA? Are you willing to lose the customer DOE is in the enrichment business by driving them to an uncompetitive position?

Mr. PARRIS. I guess it is my view, Senator, that our particular power contract has not been the major factor in DOE's loss of particularly its foreign sales. And I don't think our power cost represents that portion that makes that go, particularly the demand charge.

Senator HUMPHREY. I see. Well, you don't think TVA is the responsible party for the noncompetitive posture of DOE? How can you say that when TVA's electricity rates to begin with are considerably higher than the private utilities who supply the power to the other two plants principally?

Mr. PARRIS. Well, the cost of power, DOE could do additional enrichment, and I am not an expert on this, for a power cost of about $55 per SWU, under our contracts. The price that they charge for such SWU's is $138 a SWU. That power cost represents about 40 percent on an incremental basis of those costs. It is not the predominant factor. I can't speak to the remaining parts of the cost.

Senator HUMPHREY. That is an interesting observation. What about that, the Department of Energy? What does the other 60 percent represent?

Mr. LAGRONE. Just a moment, please. If I may, sir.

Senator HUMPHREY. OK, no problem. This is a learning experience for me. That is one of the reasons I am doing it.

While you are searching for that information, let me point out to Mr. Parris, for his comment, the statistics that show TVA costs in mills per kilowatt are 32.86 EEInc. and OVEC, which supplies the other enrichment plants, is 22.01 mills per kilowatt and 19.67, respectively. Why is TVA so much more expensive?

Mr. PARRIS. Our supply to DOE is based on our entire system cost, as was pointed out in my testimony. It is our costs, and they have escalated over the last several years at tremendous rates. There is no question about that. But we believe our costs are appro-

priate for our kind of system, and we think they represent basically what the costs are.

We are trying at all times to keep those minimized. It is my understanding, and I am not maybe the person who could best speak to this, that the supply from OVEC and EEInc. is from dedicated facilities that were built a long time ago and are basically depreciating. That is a different concept from what we use to supply our system.

Could I just raise one point. I noticed in the newspaper in Knoxville over the weekend, and this is something that just honestly blew my mind a little bit, if I could just quote from this article a couple paragraphs, and it will be short:

> Excess revenues from three Government uranium enrichment plants, including one at Oak Ridge, are available to help finance termination of the Clinch River breeder reactor project, CRBRP, officials said today. Nearly $100 million in excess revenue is expected this year, said Percy Brewington, acting CRBRP manager for the U.S. Department of Energy.

Senator HUMPHREY. Maybe I missed something there, but I didn't get the point of your reading that.

Mr. PARRIS. The point is apparently the Department of Energy has excess revenues over and above their cost. Again, this is for their enrichment endeavor. You know, to the tune of $100 million. That is what I understood from this article.

Senator HUMPHREY. So you are saying they could cut out the profit and reduce their unit cost.

Mr. PARRIS. Yes. I think they have some room to be more competitive is the point.

Senator HUMPHREY. OK. Well, those parties could be more competitive, apparently.

Mr. PARRIS. I am willing to work on it, sir.

Senator HUMPHREY. Good. Where were we?

Mr. LAGRONE. Senator, you were asking me to comment on the point about cost of power. Our current breakdown shows there is about $67.05 that goes to power out of the total $138.86. Now where does the balance of this come from? It comes from development costs. It comes from construction costs because all of the things in the enrichment area have to come out of revenues, things like GCEP, advance gas centrifuge development program, the laser program, atomic vapor, Department of Energy administration, interest, depreciation, inventory. All of those things figure into that cost. We operate on a full cost recovery.

Senator HUMPHREY. Thank you. That is interesting.

Mr. Sanger, I was in the process of asking you about two points, the first of which was why it made any difference whether TVA got its money in demand charges or purchase of electricity. The second question I wanted to ask you was about the legalities of DOE taking title to the power and selling it. You say that would not be consistent with law. Why is that?

Mr. SANGER. Our statute says that TVA cannot become a source of power either directly or indirectly outside of the area for which it is the primary supplier.

Senator HUMPHREY. Yes.

Mr. SANGER. If TVA cannot sell it outside of that area, I don't think that the statute can be circumvented by us merely selling it directly to DOE and then DOE selling it.

Senator HUMPHREY. That is a good lawyer's question. Let me ask Mr. Thorington what he thinks about it.

Mr. THORINGTON. I would like Mr. McDiarmid, utility counsel, to answer that.

Senator HUMPHREY. A member of your firm?

Mr. THORINGTON. No. Our firm is associated with his firm.

Mr. MCDIARMID. My name is Robert McDiarmid. I am associated with the firm of Spiegel & McDiarmid in Washington, sir.

A fascinating answer with respect to section 15(d). As you may know, and as I believe both Mr. Parris and Mr. Sanger have pointed out, TVA itself has attempted, although rather half-heartedly, to make sales of its excess capacity outside its area. Now that would appear to be perfectly consistent with section 15(d) of its act which talks in terms of precluding TVA from being a source of power, with some exceptions, because the intent of that section, when it was enacted, was to prevent TVA's territory for full requirements power being expanded beyond the point it was in 1957. You will recall the Dixon-Yates mess which wound up with that.

Senator HUMPHREY. No, I won't, but I will take your word for it.

Mr. MCDIARMID. Very well.

TVA has made some half-hearted attempts to sell both in Gulf States, according to the trade press, to Houston, and to some utilities in Florida. Now, as a practical matter, those sales did not occur. We, of course, don't know precisely why they didn't occur.

However, a thousand megawatts of capacity was sold by the southern system to Gulf States, it was something more than a year ago, capacity that could have been sold by TVA and which we understand was suggested by TVA but that did not go through. Why that may be I don't know.

The Florida Power & Light and some cities in Florida purchased a substantial amount of capacity again from the southern system. There are other transactions which are still in the wings waiting to see what happens. Houston Lighting & Power, supposedly, is in the market for a substantial block of power, again according to the trade press, when the H.V. interconnection between Texas and Louisiana is installed.

Now if, as we understand, TVA is of the view, as we believe it should be, that 15(d) does not preclude it making those sales, it is not obvious to us why the same section would have any effect on the Department of Energy making similar sales.

I point out to you in this regard that the kinds of sales that TVA has historically made, up to 1,500 megawatts at a time, have been to utilities with their own power supply responsibility who are in charge of making sure that their own customers have enough capacity to serve them. Yet that is precisely the kind of arrangement that has been discussed here. We are not talking about municipalities or other entities that buy full requirements power and intend to buy full requirements power from their neighboring large investor-owned companies. The Mississippi cities whom I represent have through contractual and other arrangements full responsibility for meeting their own needs, and do so, both through their own in-

stalled capacity and power which they purchased in units elsewhere. It is true in Florida.

Now why, and perhaps TVA can answer that, does section 15(d) impose an impediment to the Department of Energy making these transactions and one of the several things that has been suggested if it doesn't impose an impediment to TVA making similar transactions?

Senator HUMPHREY. I am beginning to feel like a judge here. Let's hear from the other side. Have you in fact tried to sell electricity to utilities outside your region?

Mr. SANGER. That information is simply not accurate. Of course, the answer to the question is that as an express exception to the limitation, our statute says TVA may when economically feasible enter into exchange power arrangements with whom we had such arrangements on July 1, 1957. Those are the only companies we have ever attempted to dispose of power with. We have never attempted to sell directly to any company outside the valley, and that includes Houston Power & Light and Florida. We simply could not do that directly.

Senator HUMPHREY. You dealt with what intermediary then?

Mr. SANGER. Well, we dealt with a number of companies with which we had interchange agreements as of July 1, 1957. The Mid-South Companies, Georgia Power, Appalachia Electric Power, Carolina Power & Light Co., all of those companies surrounding us we have dealt with and we have existing arrangements with them where we sell power to them.

Senator HUMPHREY. You sell power to them directly?

Mr. SANGER. Yes.

Senator HUMPHREY. Then they resell it. Is that the same as wheeling or is it not?

Mr. SANGER. Whatever kind of system needs they have, that is their determination.

Senator HUMPHREY. They use it within their own systems or they sell it to other systems?

Mr. SANGER. They have various kinds of exchange arrangements themselves. I am not fully familiar with their arrangements.

Mr. THORINGTON. Mr. Chairman, what I think the net result of the statement is is that TVA can sell to a system with which it has an exchange arrangement. That system in turn can sell to a system that does not have an exchange arrangement. The only reason the systems that have an exchange arrangement would want to buy the power from TVA is because the systems that don't have the exchange connection want the power. So to us it is an indirect sale by TVA.

I think the important point is that under the proposal made by the Alabama-Mississippi municipals, we have tried to make this sale within the confines of 15(d) where it says unless otherwise specifically authorized by an act of Congress. We believe that the Surplus Disposal Act is a specific authorization for DOE to sell this power and that 15(d) is not an impediment for that reason and does not have application in this case.

The Alabama-Mississippi municipals have proposed to DOE that the power be sold as excess property. We believe that the Excess Property Act provides an exception to 15(d).

Senator HUMPHREY. Let me interrupt you there because I don't know what that is. Does that apply to all kinds of Government surpluses?

Mr. THORINGTON. That would be correct.

Senator HUMPHREY. It is sort of a generic thing?

Mr. THORINGTON. That would be correct.

Senator HUMPHREY. Go ahead.

Mr. THORINGTON. That 15(d) of the TVA Act says unless otherwise specifically authorized by act of Congress. We think that the act of Congress is the Surplus Property Act. So, therefore, you have a specific authorization that is an exception to 15(d).

Senator HUMPHREY. OK. Well, the parties are not going to agree on that, I am sure. It is a matter of interpretation.

Let's look at the contract under which DOE agreed to purchase this electricity. Is there any disagreement on the clause 15 I guess it is, which says the following, in part: "Atomic Energy Commission shall not sell or otherwise dispose of any of the power supplied hereunder except by agreement of the parties," and so on? Is there any disagreement between TVA and, for that matter, DOE and Mr. Thorington that if the parties agree that in fact DOE, I should say, the successor agency, can sell this electricity if other impediments are resolved? Is there any disagreement about this language in the contract, specifically the clause "except by agreement of the parties?" Is there any disagreement that that would allow DOE to sell this electricity, assuming other problems are resolved?

Mr. LAGRONE. No disagreement in our view.

Mr. PARRIS. Assuming other problems were resolved. I think as between DOE and TVA there is a good understanding of that clause.

Mr. THORINGTON. Not in our view either, except we would go one step further. We don't feel TVA can unreasonably withhold its consent.

Senator HUMPHREY. Why not?

Mr. THORINGTON. Well, we think that the Uniform Commercial Code, as it appears in Tennessee law, which this contract would be governed by the law in that State, in effect stands for that principle.

Mr. SANGER. Of course, this is a Federal contract and it would be governed by the Federal law and not the law of any particular State. That is clear as regards Government contracts.

Mr. THORINGTON. What is the Federal law on that point, Mr. Sanger?

Mr. SANGER. There is nothing in the Commercial Code——

Senator HUMPHREY. Excuse me. We can't allow witnesses to cross-examine each other. Otherwise I don't get paid. What is the question? I will ask it. What flaw do you see in the argument now, Mr. Thorington?

Mr. THORINGTON. No; I asked what Federal law applies in that case then.

Senator HUMPHREY. Mr. Sanger, what is your thought on that?

Mr. SANGER. I assume his point is with regard to the Uniform Commercial Code. I was making the point that the Uniform Commercial Code as a law in the State of Tennessee would not apply to a Federal contract, that it is governed by Federal law.

The cases involving this minimum bill provision, Federal cases, applying Federal law, have stated that the TVA Board has the authority and the responsibility to set rates for power. This provision which prohibits an assignment is a part of the ratesetting process. And I think that TVA has the right to insist upon that contract provision if it wishes.

Senator HUMPHREY. Thank you. Well, let's move on.

Mr. LaGrone, let's look into this matter of the diffusion facilities. You are going to shut some down, is that not correct, at some point in the future?

Mr. LAGRONE. At some point in time in the future we would be shutting down some of the diffusion plants.

Senator HUMPHREY. You have three of those.

Mr. LAGRONE. Yes, sir.

Senator HUMPHREY. Ohio, Kentucky, and Tennessee.

Mr. LAGRONE. Correct.

Senator HUMPHREY. How are you going to decide which one or ones to shut down?

Mr. LAGRONE. That is a subject not only of the how but the shutdown that is periodically visited and revisited by the Department in ongoing studies. Economics has been one factor. Community or social impact is another factor that enters into it. Also, demand for enrichment services, maintaining a standby capability. All of those factors will come into play.

Senator HUMPHREY. How heavily will it count that the plant supplied by TVA, the Oak Ridge plant, is using by far the most expensive electricity?

Mr. LAGRONE. I don't view that as a killer criteria for the Oak Ridge plant, sir, or as a controlling criteria.

Senator HUMPHREY. What kind of criteria do you consider it?

Mr. LAGRONE. I consider it an important criteria. But as I mentioned, there are other factors that come into play.

Senator HUMPHREY. Could you supply your near-term enrichment demand with two plants?

Mr. LAGRONE. With two plants? I don't believe that is the case. Ewin? If I may put him on the record.

Senator HUMPHREY. Yes, certainly. Who is this, please?

Mr. KISER. My name is Ewin Kiser, Oak Ridge operations, Department of Energy.

Looking forward with the projections that we see now, two diffusion plants by themselves could not supply the full requirement without the help of GCEP or some additional requirements.

Senator HUMPHREY. What is the SWU demand now and what is our total capacity?

Mr. LAGRONE. Our total capacity is about 27 million. That is after the uprating. I think we produced about 10 or 11 million SWU's in the past fiscal year. We will produce about 12 million SWU's this year.

Senator HUMPHREY. Let's say in 5 years. Do you have any such projection?

Mr. LAGRONE. A 5-year projection? Ewin?

Mr. KISER. We should be producing 15 to 17 million SWU's about 5 years hence, going up to something in excess of 20 million by 1990.

Senator HUMPHREY. Then why do you say that we need all three plants to supply that demand?

Mr. KISER. Each of the plants has about equal capacity. The total capacity of the diffusion plants is 27 million separative work units. Two of then would only have two-thirds of that, or about 18 million separative work units, which is insufficient for about 1990.

Senator HUMPHREY. When will DOE make a decision on closing down one plant or another?

Mr. LAGRONE. I would say any time between the mideighties on out to 1990. The decision could come earlier, obviously, than the actual shutdown. But we have talked all the way from 1990 to 1988 in terms of when to announce, when to come up with a shutdown date. We have not determined that date.

Senator HUMPHREY. I want to return to the matter of DOE selling the electricity. What kinds of problems do you anticipate in transmitting or wheeling that electricity should you be able to sell it, Mr. LaGrone? Is that a problem?

Mr. LAGRONE. There would be problems, but I don't think insurmountable problems.

Senator HUMPHREY. How does that work? What is in it for a utility, simply wheeling electricity from one region to the other? Just transmission charges I guess, is that it?

Mr. LAGRONE. I suppose that would be the case.

Senator HUMPHREY. Is that how it works? So it is just money in the bank for them, right? Does it represent any kind of a burden to them?

Mr. LAGRONE. I am not aware it would represent a burden. I have heard some complaints or some mention that the privates might complain if in fact this electricity was being sold to municipals. Whether that is street talk, fact or fantasy, I really don't know. But we would like to be on a course where we could sell that electricity. And it is our view that under section 161(g) of the act that in fact we could take that power, treat it as excess power, and sell it and dispose of it.

Senator HUMPHREY. Does anyone foresee a problem in distribution if DOE was permitted to sell its electricity?

Mr. THORINGTON. Mr. Chairman, I think that would all depend upon who the ultimate purchasers of the power were. As far as the Alabama municipalities are specifically concerned, the Southern Co., which would be the wheeling utility in this particular case, is under an NRC order to wheel to the municipals. So we don't see the southern utility would have a capacity problem or legal problem in wheeling to the municipalities in Alabama.

Mr. MCDIARMID. In terms of Mississippi cities, sir, there is in place an agreement with the Mississippi Power & Light Co. calling for transmission of power, and there is no anticipated technical problem associated with any of that.

There is also an NRC license condition outstanding between that combination of things. We wouldn't anticipate a problem, either.

In general, in the southwest power pool area, which encompasses Mississippi, Louisiana, the eastern part of Texas, Arkansas, Oklahoma, there is not a technical problem on transmission, nor is there in the area to the northwest of TVA.

There is a limitation on transmission into the peninsula area of Florida, a physical limitation, which is in the process of being overcome by new construction of transmission.

Senator HUMPHREY. Mr. LaGrone, has the Department ever considered simply ceasing payment of these demand charges?

Mr. LAGRONE. Not to my knowledge.

Senator HUMPHREY. What would TVA do, Mr. Parris, if DOE stopped paying?

Mr. PARRIS. We would get the biggest stick we have, sir.

Senator HUMPHREY. What is that?

Mr. PARRIS. I assume we would take legal actions to the extent we could.

Mr. SANGER. When other companies have failed to pay, then we have sued them and collected, if the chairman please.

Senator HUMPHREY. Mr. LaGrone, how did the Department of Energy go about securing release from demand charges with OVEC and EEInc.?

Mr. LAGRONE. Could I ask one of the gentlemen here to answer? As I mentioned, I have been at Oak Ridge for 6 months. I would like to get one of the gentlemen here to the table who participated in those negotiations.

Senator HUMPHREY. Yes; certainly.

Mr. SULLIVAN. Sir, I am Ray Sullivan with the Department of Energy in Oak Ridge.

When we entered into discussions with the Ohio Valley Electric Corp., Ohio, and Electric Energy, Inc., in Illinois, those companies had sponsoring companies who found that they could utilize this source of power which was cheaper than the sources available to them. In that case, they were willing to take some part of the contract demand that we had under each of those contracts.

Senator HUMPHREY. So it wasn't that they were all that magnanimous. They just all had other customers.

Mr. SULLIVAN. That is a correct statement.

Senator HUMPHREY. TVA's objection on that score is they already have overcapacity and you want your money. OK.

I have no further questions today. It has been very interesting. I thank you all for your help.

I do urge that the Department of Energy find out just how much market there is out there and try to reach an agreement. I hope TVA will be cooperative, so we don't have to resort to some kind of legislative means, in letting the Department of Energy sell this electricity so that either the taxpayers don't get stuck paying this money or the ratepayers pay more for electricity.

Mr. LAGRONE. Mr. Chairman, I would say obviously the Department has done some work on looking at what markets are out there. We will do additional work. But as I mentioned earlier, the linchpin in this thing is to secure agreement between us and TVA with respect to our rights to market that power. We are on a course to reopen a new dialog in that respect.

Senator HUMPHREY. When will that occur?

Mr. LAGRONE. I would hope in the very near future. I have no date specifically, but I assure you that is our commitment to work in that direction.

Senator HUMPHREY. Is there something holding up setting up a date?

Mr. LAGRONE. Pardon me?

Senator HUMPHREY. Is there something holding up setting a date?

Mr. LAGRONE. No, sir, there is nothing holding up setting up such a date. It is just a matter of getting the right parties at the right levels together to enter into discussion.

Mr. THORINGTON. Mr. Chairman, could I make a comment? Based on my 18 months experience in trying to deal with TVA through DOE, I suspect in 1992 we will be right where we are today unless this matter is given attention at the secretarial level at DOE and the Board level at TVA.

Senator HUMPHREY. Unless the chairman of the full committee objects, I intend to hold another hearing early upon the return of the Congress after the turn of the year to find out just what progress has been made on this score. I hope that we will see some real movement by then.

Thank you very much.

[Whereupon, at 11:55 a.m., the subcommittee was recessed, to reconvene, subject to the call of the Chair.]

[Statements submitted for the record and responses to written questions follow:]

RESPONSES FROM THE DEPARTMENT OF ENERGY TO WRITTEN QUESTIONS

QUESTIONS AND ANSWERS

FOLLOWING THE

NOVEMBER 14, 1983, HEARING

BEFORE THE

SUBCOMMITTEE ON REGIONAL AND COMMUNITY DEVELOPMENT
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

UNITED STATES SENATE

Q.1 In Mr. La Grone's statement before the Subcommittee he commented that there was no "legal impediment" to the disposition of the Department's excess power for use in areas outside of the TVA area other than the contractural requirement that TVA consent to such disposition. Please explain why the Department does not believe Section 15(d) of the Tennessee Valley Authority Act applies in the present case. Obviously, the TVA believes that Section 15(d) does present, in some of the proposed arrangements, a legal impediment. Please explain why their reasoning is false. Please provide any precedent that would be contrary to the TVA interpretation.

A.1 The portion of the Tennessee Valley Authority Act cited provides in pertinent part (16 U.S.C. § 831n-4) that TVA:

> ". . .shall make no contracts for the sale or delivery of power which would have the effect of making the Corporation or its distributors, directly or indirectly, a source of power supply outside the area for which the Corporation or its distributors were the primary source of power supply on July 1, 1957 . . .."

Section 15d of the Tennessee Valley Authority Act of 1933, 16 U.S.C. 831n-4, generally limits direct or indirect sales of power by TVA or its distributors to the TVA service area that existed on July 1, 1957. This limitation was added to the TVA Act in 1959 to formalize geographic bounds of TVA's service area as a complement to statutory borrowing authority intended by the same legislation to permit TVA to make capital investments without resort to the annual appropriations process. This statutory limitation was designed as a substitute for Congressional budgetary control to prevent unconstrained expansion of TVA's service area at the expense of competitors with higher generating costs. Hardin v. Kentucky Utilities Co., 390 U.S. 1, 6-7 (1968).

This provision of the TVA Act, of course, is directed to the activities of TVA itself and its distributors. This Department, as a customer of TVA, falls into neither category. Administration of the TVA Act is the responsibility of TVA, not of this Department. So the effect, if any, of section 15d of the TVA Act on any proposal to dispose of surplus power owned by this Department would be a matter for the directors of the Tennessee Valley Authority to determine in the first instance. No particular proposal has been agreed upon between the TVA and this Department, although several general approaches relating to possible disposition of this power have been explored.

Q.2. During the Hearing it was stated that if DOE were relieved of its demand charges with the TVA then the Department of Energy's cost to its enrichment customers would be competitive in the international market. Please provide a table including the present cost of separative work for the Department of Energy and the comparable costs for the Department's international competitors. Please include in that table the cost of DOE's enrichment services if the demand charges were removed from the calculation of overall cost of enrichment. Does the Department agree that the abolition of demand charges by the TVA would make the Department of Energy's cost for enrichment services competitive in the international market? If not, why not?

A.2. Price Comparisons (in U.S. dollars):

	$/SWU**
Urenco	117
Eurodif	100
USSR	124
Secondary Market	80-125
U.S. (Fixed Commitment Contract)	139 (132*)
U.S. (Requirements Contract)	150 (143*)
U.S. (Utility Services Contract-Ceiling)	135--ceiling charge

* Excludes cost of demand charges for energy not taken. The elimination of demand charges for energy not taken would make DOE's SWU price more competitive in the international market than it currently is.

** The numbers shown are estimates for non-U.S. prices based on some actual transactions; however, sales on the secondary market (sales by entities having excess inventories) have ranged from $80 per SWU by non-U.S. entities to $125 per SWU by U.S. entities.

Q.3. If the Department were to lower the cost of enrichment services by removing the demand charges presently paid to the Tennessee Valley Authority, why would the DOE need to construct the Gas Centrifuge Enrichment Plant to be competitive in the international market?

A.3. Elimination of demand charges for energy not taken would make DOE's SWU price more competitive with other suppliers; however, to obtain a significant pricing advantage over these suppliers, the electric power intensive gaseous diffusion technology would have to be replaced by less expensive advanced technologies. The Gas Centrifuge Enrichment Plant has the potential for replacing the expensive gaseous diffusion process with the less expensive advanced gas centrifuge process.

Q.4 What would the cost of the enrichment services be if all research and development within the enrichment program were halted and those charges were not passed through to the enrichment customer?

A.4 The effect of uranium enriching research and development (AGC and AVLIS) on the price customers pay for separative work can be expressed in two ways:

A. Another meaningful way to express the effect of research and development on the cost of separative work is to divide a single year's outlay for research and development by the number of SWUs that are sold in that year. For example, in FY 1985 research and development outlays are projected to be $150 million and SWU sales are estimated at 10.1 million SWU. Thus, the expenditure per SWU for research and development would be $14.85

B. The price for separative work is established on the basis of full recovery of the government's costs. Such costs include elements for depreciation of investments in facilities including the gas centrifuge enrichment plant, all operating costs, R&D, and interest on investment. Historically, the price calculations have been based on projected costs and SWU sales for a forward 10-year period. Using the 10-year period for calculation has the effect of dampening year-to-year fluctuations and portrays the long-term operating plan. The latest R&D component of the published SWU price is $5 per SWU.

The single year computation for research and development costs is greater than a 10-year forward average for two reasons. First, over the 10-year period research and development costs have been projected to decline as new technologies would pass through the research and development phase and are deployed. Second, SWU sales were projected to increase in the latter part of the 10-year period, and thus the research and development costs would be spread over more SWUs sales.

Q.5. Wouldn't the more economic approach to the enrichment program be to terminate all construction work and research on Gas Centrifuge Enrichment and to accelerate research on the Advanced Isotope Separation technology?

A.5. The Gas Centrifuge technology is well developed with production size machines successfully operating in the Centrifuge Plant Demonstration Facility located in Oak Ridge, Tennessee. DOE's Advanced Gas Centrifuge (AGC) development program has the goal of increasing the capacity of the current production machines by a factor of three. Successful completion of a low cost production facility utilizing AGC technology in the Gas Centrifuge Enrichment Plant (GCEP) at Portsmouth is considered highly probable and timely. The Advanced Isotope Separation technology utilizing the Atomic Vapor Laser Isotope Separation (AVLIS) process is still in the developmental stages. While DOE believes this latter process has high potential for future deployment as a low cost production technology, it would not be a good business risk to stop work on GCEP until the AVLIS technology has been proven. The Department is slowing and rescoping the construction of GCEP to allow incorporation of the best advanced technology into a production complex.

Q.6 The Department has taken the position that it can dispose of the excess power it has under contract with DOE by the authorities provided under the Federal Property and Administrative Services Act of 1949, as amended. Please explain how the language of that Act provides the "specific authorization" called for in the Tennessee Valley Authority Act for an exemption to Sec. 15(d) of the TVA Act. Please be specific and provide any legal precedents for your interpretation.

A.6 The premise that the Department would rely on the Federal Property and Administrative Services Act of 1949, as amended, for authority to dispose of the excess power it has under contract with TVA is incorrect. The electric power available to DOE under the TVA contracts is property it has acquired in carrying out functions under the Atomic Energy Act. That statute provides the Department independent authority to dispose of surplus property. Atomic Energy Act of 1954, Sec. 161(g), (j), 42 U.S.C. 2201 (g), (j). DOE need not, and would not rely on the more general GSA regulations for the disposal of surplus property which implement the Federal Property and Administration Services Act of 1949, as amended.

In this regard, no specific exemption from Section 15(d) would be needed for a sale by DOE since that provision, of course, is directed to the activities of TVA itself and its distributors. This Department, as a customer of TVA, falls into neither category. As indicated in the answer to question number 2, the possible effect, if any, of Section 15(d) on any specific proposal to dispose of surplus power should be determined in the first instance by TVA itself because administration of the TVA Act is the responsibility of TVA, not of this Department.

STATEMENT OF

HUGH G. PARRIS, MANAGER OF OFFICE OF POWER,

TENNESSEE VALLEY AUTHORITY

BEFORE THE

SUBCOMMITTEE ON REGIONAL AND COMMUNITY DEVELOPMENT OF THE

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

UNITED STATES SENATE

November 14, 1983

We are glad to have this opportunity to provide information about the long-term contractual arrangements, including those with the Department of Energy, under which TVA makes available electric power to customers having large loads. The operational and economic bases for these arrangements are closely related to the legal bases for them. Herbert S. Sanger, Jr., TVA's General Counsel, is here with me and will be glad to discuss the legal aspects of these arrangements.

TVA, consistent with its statutory responsibilities, supplies power at wholesale to 160 municipal and cooperative distributors in Tennessee and parts of six other states for resale to domestic, commercial, and industrial customers. In addition, TVA provides power directly for a number of

large industries having very large or unusual loads, as well as several Federal agencies, including the DOE atomic energy facilities at Oak Ridge and Paducah.

As a supplier of power, TVA's objective is the advancement of the national defense and the physical, social, and economic development of the area in which it conducts its operations by providing that area with an ample supply of electric power at the lowest feasible cost. Thus, TVA considers its electric power system to be for the benefit of the entire area it supplies. Individual customers are not served from individual generating plants. Instead, all of TVA's power goes into what is in effect a common pool, and all of TVA's customers are supplied from that pool.

Most commodities can be stored until sold, and the plants producing them can continue production up to their maximum capacity without interruption. However, this condition does not exist in the case of electricity. Electricity is unique in that it cannot be stored for later use and it must be produced as used. Also, any customer can use electricity whenever it wishes by actions as simple as flipping a switch. The power supplier must be able to

meet the demand of its customers instantaneously. Accordingly, power suppliers, including TVA, plan and construct facilities to have available at all times the generating and transmission capacity required to meet the forecasted demands of all their customers. This capacity includes the necessary margin to take care of equipment outages and special circumstances which may arise.

It now requires on an average 10 to 12 years to construct and place in commercial operation large steam generating units. TVA thus must plan years ahead to match system capacity with loads and must continuously have under construction the capacity to meet projected growth in both existing and new loads. These generating and other facilities require tremendous investments of money; the investment per revenue dollar is much larger in the electric industry than in most others. Most of this investment is, of course, made long before the generating plant and related facilities are available for use, and the fixed costs on them continue and must be paid throughout their life (approximately 35 years) whether or not those who contract for electricity ever use the amounts for which they contracted.

In serving directly customers with large loads, TVA enters into "availability contracts." Under an availability contract, TVA agrees to make available continuously for the term of the contract the specified voltage and frequency at a specified delivery point, such as a substation. The maintenance of such voltage and frequency constitutes availability of the power and energy for which the customer agrees to pay. The amount of power which the customer requests and TVA is responsible for providing under the contract is generally expressed in kilowatts and is the customer's "contract demand" under the contract. While the customer can use this available power to whatever extent it wishes, TVA must at all times, except for force majeure, make available firm power in the amount specified in the contract.

Consistent with the provisions of the TVA Act, TVA establishes the rates for the electric power it supplies for the region. The setting of these rates requires complicated decisions involving statutory requirements, bond covenant requirements, costs, and various other factors, including judgment. Among these are the requirements that TVA

(1) Finance its power system from power revenues and from the proceeds of its bonds which are backed only by TVA's power revenues.

(2) Pay $20 million per year to the United States Treasury until $1 billion of the appropriations which were invested in the TVA power system as of 1959 (when the TVA revenue bond amendment was enacted) has been paid.

(3) Pay the annual interest cost on all borrowings, plus an annual return to the Treasury on the appropriation investment still outstanding computed on the basis of the Treasury's average cost of its borrowed money.

(4) Make in-lieu-of-tax payments to State and local governments as provided under the TVA Act.

(5) Charge rates for power which will:

(a) Produce gross revenues sufficient to cover the costs of operating, maintaining, and administering the power system and all other payments mentioned above;

(b) Provide "such additional margin as the Board may consider desirable"; and

(c) Meet the tests set out in sections 3.2, 3.3, and 3.4 of TVA's Basic Bond Resolution, which constitutes a contract between TVA and its bondholders.

At the same time, the TVA Act requires power rates to be as low as feasible.

As is generally true throughout the electric utility industry, rates which have been established for serving large loads in the TVA region include (1) a component related to TVA's fixed costs (such as interest and depreciation) on the equipment and facilities required to make power available (this is generally referred to as a demand or capacity charge), (2) a component generally related to those costs (such as fuel) which vary with the amount of energy generated (this is usually referred to as the energy charge), and (3) certain minimum payment, or minimum bill, obligations extending for the term of the contracts.

The minimum payment obligation is a customary and important part of the rate structure because a large part of the cost of serving a customer is independent of how much power the customer uses and depends instead on how much

power the customer has asked the supplier to have available for the customer. TVA has long sought, in designing its rates, to reflect costs of service. The minimum payment obligations under TVA's industrial rates are an integral part of that effort, taking into account as it does the capacity needed to serve large industrial loads and the fixed costs--interest, depreciation, operation, maintenance, and administration associated therewith.

If a large customer were to discontinue taking power or cut its actual use far below the amount TVA is required to make available under the contract, TVA, unless protected by minimum payment obligations, would suffer a substantial loss since the capacity provided to make the power available would not be used for the purpose intended. This loss would result in higher rates that would affect other customers because TVA is a nonprofit entity whose customers rates are directly related to the cost of serving them.

The extent of that loss and rate increase would be difficult or impossible to determine precisely at the time of entering into a contract because TVA cannot know if or when such curtailment or termination of use may occur; what the amount of any curtailment may be; what the economic conditions may be at the time or thereafter; and

what the situation may be with respect to other customers' loads at the time or thereafter.

Therefore, in establishing rate schedules, including minimum payment requirements for the availability of power, the electric system must take into account the average conditions which can be expected for customers such as the large industrial customers. If the large industrial customers were to avoid minimum payment obligations, the resulting shortfall in revenues needed to cover fixed costs could only be made up by increasing rates generally applicable to ratepayers.

For large loads, the appropriate level of minimum payment obligations is measured by a reasonable appraisal of the average impact of all the highly varied conditions, favorable and unfavorable, that could occur over the years in serving customers with such loads.

In light of such uncertainties, TVA in initially entering into a contract with a customer having a large load will only do so on the basis of a contract extending at least 10 years. This assures that TVA, through the minimum payment obligations for the term of the contract, will be able to recover at least a portion of the fixed costs

incurred in providing facilities necessary to provide the amount of power requested by the customer. TVA's fixed costs, of course, continue for the life of its equipment and facilities (about 35 years), which is much longer than the term of its power contracts. TVA thus bears the risk of having to carry those fixed costs if other system loads do not increase sufficiently to pick up loads of customers which do not renew their contracts or which do renew them for substantially reduced amounts of power.

To further assure that costs incurred in constructing and maintaining facilities to serve a large load at a particular location are not unfairly shifted to other ratepayers, the power contracts provide that the electric power under the contract is made available for use at that particular location. The contracts do not permit transfer or resale of the power by the customer for use at some other location. If an existing customer, because of changed circumstances, were to transfer power to a different facility or customer, this would be replacing sales that TVA, in carrying out its power supply responsibilities, was prepared to make available as a result of its planning and substantial investment in facilities. Consumers throughout the area would then have to absorb the fixed cost of those unused facilities through higher electric rates.

Moreover, to the extent that TVA might at times be able to find a market for any power that an industrial customer may not then be using under its contract, this will provide some additional funds to help cover fixed costs (particularly those continuing after the expiration of power contracts) incurred in providing the facilities to serve the industrial customer. Large load customers, including DOE's predecessor (AEC) when contracting for power for the Oak Ridge and Paducah facilities, have understood when entering into their power contracts that the power made available under the contract could not be resold and that in the event of reduction in use at the customer's facilities there would be continuing minimum payment obligations for the term of the contract even though TVA, prior to the expiration of the contract, might find a market for any of the power not being used.

The conditions now existing as a result of the current, as well as projected, operational cutbacks, including substantial reductions in the amounts of power being used, at DOE's atomic energy facilities are a very real life demonstration of the absolute necessity for minimum payment obligations continuing for the contract term. TVA has expended exceedingly large sums to provide system

facilities adequate to supply the amounts of power requested by AEC, and set out in the Oak Ridge and Paducah contracts. Under those contracts, a total of 3,560 MW is now available for use at DOE's Oak Ridge and Paducah facilities, and under amendments requested by AEC and entered into in 1974 the amount of power to be made available increases in steps in 1984 to a level of 4,485 MW.

To help put this in proper perspective TVA, in order to make this amount of power available (including necessary capacity reserves), must have the equivalent of 5 large nuclear units. Projected costs for such units range from $1 to $3 billion for each unit or a total of $5 to $15 billion. Obviously, the fixed costs TVA has incurred in providing facilities to make available the amounts of power requested for these facilities will continue even though DOE may use less power as a result of operational cutbacks. Without the minimum payments by DOE, these fixed costs incurred in providing capacity to serve DOE's facilities would have to be recovered from other consumers through higher rates.

If TVA were to relieve DOE of its contract obligations, as has been suggested, and these lost revenues were recovered from the class of large industrial customers in

the TVA region (those having loads over 5,000 KW), it would necessitate an increase in charges of about 14 percent.

Moreover, if DOE were to be relieved of its payment obligations, there are many other customers with large loads who are in similar situations and who would expect and demand that they too be relieved of minimum payment obligations they are now making. As a result of poor economic conditions, numerous other customers with large loads are operating at substantially reduced levels in the TVA region. Again, if this were to occur, it could only result in further improper shifting of costs to other consumers through higher rates and mean that the rate increase for industrial customers referred to above would be higher than 14 percent.

TVA's risk of not being able to fully recover the fixed costs of providing facilities increases significantly for large customer loads. And the larger the load, the greater is that risk, because there is less likelihood of a market being available to absorb such amounts of power when a directly served customer does not renew its power contract. Again, this is particularly significant with respect to DOE which will have a total contract demand of

almost 4½ million kilowatts or more than 10 times the second largest contract demand which is for a Reynolds Metals Company facility. The DOE contract demand is more than 17 times the contract demand of any other industrial customer of TVA other than Reynolds.

The risk of being unable to recover through additional sales of power fixed facility costs continuing after the expiration of a contract that is not renewed, has been magnified further by the fact that growth in electric power loads are now projected to increase by somewhere between 1 and 2½ percent per year. This is quite a contrast to the annual 6-8 percent load growths that were being projected at the time TVA entered into the contracts to supply power for the Paducah and Oak Ridge operations.

In light of such circumstances, the economic necessity for the contractual arrangements that provide some protection to TVA's other customers for investments made on the basis of a firm contract with DOE is quite apparent. The DOE obligation to TVA involves not only a firm commitment but one that is backed by reasons of equity to our other customers. These considerations are independent of the impact on the price of enriched uranium just as our need to increase rates to cover costs in recent years is

independent of the effect on the price of aluminum and other energy intensive products. TVA happens to buy a lot of enriched uranium from DOE and we are aware of some of their problems. It is not TVA power that has made DOE noncompetitive in the world market for uranium enrichment services.

DOE has stated its own reasons for its noncompetitive situation in the world uranium market though Assistant Secretary for Energy, Shelby Brewer, in testimony last month before the Subcommittee on Energy Conservation and Power of the House Energy and Commerce Committee. I quote:

> [T]he U.S. has not operated the enrichment enterprise as a business; over the years we have misread or disregarded the market; we have handcuffed ourselves with contracting and marketing constraints; we have acted as though we are monopolists when we are not; we have antagonized all of our customers, both foreign and domestic. In short, we are not competing but reacting.

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Secretary Brewer explained that the central problem facing DOE's uranium enrichment program is the massive imbalance between world production and world demand. He pointed out, this bad situation is compounded for DOE by several other factors such as:

> Foreign and domestic utilities hold excess inventories and are willing to resell their enriched uranium at prices below current product costs, through secondary market transactions.
>
> Participants in the two major enrichment consortiums--Eurodif and URENCO--have developed aggressive marketing programs offering more flexible contractual arrangements than DOE to utilize their excess capacity.
>
> Many of DOE's enrichment contracts with utilities allow those utilities to back out of them at little or no cost.
>
> The strength of the U.S. dollar relative to European currencies has

added to the economic incentives to purchase foreign enriched uranium. In the words of Secretary Brewer: "Eurodif enjoys a price advantage over DOE, primarily because of the devaluation of the French franc."

DOE's situation should not be laid at TVA's doorstep. Secretary Brewer made these points:

The action of the U.S. Government in closing its order books from 1974 to 1978 gave a large boost to DOE's European competitors. As a consequence, DOE's share of the foreign enrichment market fell from 100 percent to 70 percent between 1974 and 1978. By 1980, DOE's share of the foreign market had decreased to 35 percent.

The U.S. Government's nuclear export policy had the effect of undermining its image as a reliable supplier.

DOE's new European competitors more aggressively marketed their enrichment

services and offered their customers greater contracting flexibility.

DOE substantially overestimated the growth of the domestic market for enriched uranium. Based on that anticipated growth of commercial nuclear power, two extensive gaseous diffusion plant expansion programs, the Cascade Improvement Program (CIP) and the Cascade Uprating Program (CUP), were initiated in FY 1971 and FY 1974 and both were completed in 1983.

I would like to point out that it was at the insistence of AEC that TVA agreed in 1973 and 1974 to amend the power supply contracts for the Paducah and Oak Ridge enrichment facilities to make available substantial additional amounts of power for the CIP and CUP operations. At that time, TVA had to begin constructing facilities necessary to be in a position to supply that additional 1,320 megawatts of power contracted for use in those efforts. As is clear from Secretary Brewer's testimony, most of the events causing loss of DOE foreign enrichment market occurred before FY 1981 when DOE began using less

1/

power than it had contracted for. It was at that time that DOE, through its capacity charges, began incurring minimum payment obligations.

In discussing the loss of domestic enrichment to foreign suppliers Secretary Brewer stated that "In general, they were lured in that direction by the uncertainty in U.S. price growth, by the strength of the U.S. dollar, by tailored contracts as opposed to the rigidity of U.S. enrichment contracting practices, and by the lack of clarify in our long-term enrichment policy."

In view of the worldwide glut of enriched uranium, a reduction in TVA's power charges would be unlikely to improve DOE's enriched uranium sales. Moreover, the effect of lowering TVA power charges to help DOE improve the competitive position of the U.S. in the world uranium enrichment services market would be to require those U.S. citizens and businesses that reside in one region of the country--namely the Tennessee Valley--to subsidize a U.S. Government enterprise that presumably benefits the entire Nation. That would be unfair to require these consumers to subsidize the Government's uranium enrichment enterprise for the benefit of the rest of the country. If DOE needs financial assistance, that assistance should come from

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the U.S. Treasury, where its impact will be shared equally throughout the United States.

The U.S. Government could help, if DOE's competitive position is so important to the national interest. An examination of DOE financial information for 1982 shows that part of the new centrifuge plant is being paid for by current users of DOE's services. Specifically, all of the interest on the centrifuge plant during construction is being paid for by current DOE customers--not the Treasury. In addition, it appears that DOE is selling older enriched uranium from its inventory--which had significantly lower production costs--at a price nearly twice its book costs. The difference--one might call it a "profit"--is helping to pay for the centrifuge plant.

In short, if the Treasury, rather than current customers, were paying for the centrifuge plant, DOE could reduce its current price by more than if TVA forgave DOE its capacity charge for electric power not used.

I appreciate this opportunity to describe the arrangements under which TVA makes power available and why it would be inappropriate to relieve DOE of its obligations. Mr. Sanger will now comment on the legal aspects of such agreements.

STATEMENT OF

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TENNESSEE VALLEY AUTHORITY

BEFORE THE

SUBCOMMITTEE ON REGIONAL AND COMMUNITY DEVELOPMENT OF THE

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

UNITED STATES SENATE

November 14, 1983

The need for minimum payment obligations under power supply arrangements as discussed by Mr. Parris has been expressly recognized by the courts as such provisions have consistently been held to be enforceable in accordance with the contractual terms. These court opinions have involved TVA contractual arrangements as well as those of other power suppliers.

This was examined by the court as it made a detailed analysis of prior precedents and authorities in ruling in favor of TVA in Mobil Oil Corp. v. Tennessee Valley Authority, 387 F. Supp. 498 (N.D. Ala 1974). The plaintiff in that case, a directly served customer of TVA, questioned the legality of TVA's contract provisions calling for fixed contract demands and minimum payment obligations for the full 10-year contract term. Mobil

had shut down its plant with about three years left on its contract term, thus becoming obligated for certain minimum payments each month. The court, in its decision recognized the practical necessity for, and the common use of, such provisions. The court's remarks are so comprehensive and well stated that I would like to repeat part of its comments in discussing the purpose of minimum bills being applicable for specified periods.

> The demand upon a supplier of electric power fluctuates significantly from hour to hour, day to day, and season to season. Electricity is unique in that it cannot be stored to meet the demand for it, but must be available for use instantaneously at the flick of a switch or the push of a button. Accordingly, TVA, like other power suppliers, must provide generating and transmission capacity to meet the total forecasted maximum demands of its customers (including margins in case of outages). This requires very large capital outlays.

The "lead time" required for the construction of new generating facilities had been increasing in recent years, and now ranges from 6 to 10 years. The heavy investment in such facilities must accordingly be committed long before the facilities are available for use; and the fixed costs associated with such investment (depreciation, interest, maintenance, etc.) continue and must be met whether or not the facilities actually generate electric energy.

Because of this situation, rates chargeable by electric power suppliers to customers with large contract demands, such as Mobil's, commonly provide for minimum bill payments over specified terms of years regardless of the extent to which they actually use the power which the supplier has contracted to make available for them. As stated by the

Court of Appeals for the Sixth Circuit in City of Memphis, Tenn. v. Ford Motor Co., 304 F.2d 845 (6th Cir. 1962), when lead times were considerably shorter than they are today:

> [T]he district court found that the custom and practice of electric facilities in the Tennessee Valley area, and throughout the country, is to require large industrial customers, such as Ford, to execute contracts providing for minimum bill requirements, and for terms of five years or more. . . .
>
> It appears that, in the electric power industry, plans must be made for the determination of power needs from three to five years in advance in order to take care of future loads because of the extended period required for the

> planning and construction of large generating units, and this extended period is referred to in the industry as "lead time." It is normally impossible to adjust construction programs to take account of the loss of major loads occurring within such lead time; and this is the economic basis for the industry's requirement of contracts for fixed periods with minimum payment obligations during the entire term of the contract [at 503-04].

In explaining that the minimum payment obligations are an integral part of TVA's rates applicable over the entire term of the contract, the court said:

> A minimum bill is in fact a rate for electric service. Avant Gas Serv. Co. v. Corporation Comm'n, 184 Okl. 583, 89 P.2d 291, 292 (1939); Great Northern R. Co. v. Armour & Co., 26 F.Supp. 964, 967 (N.D. Ill.1939). See State v. Sloan, 139 La. 881, 72

So. 428 (1916); Donnell v. Brockman, 117 Ark. 132, 173 S.W. 843 (1915). Minimum bill provisions are an integral portion of TVA's rates and have been from the inception of TVA's power program. . . .

* * *

The contract is an agreement under which Mobil simply promises to pay the applicable rates, including minimum bills, for the full contract term. The attempted separation of the minimum bill as a rate from the contract to pay it seems to the Court fallacious. The purpose of the minimum bill is to assure the power supplier of revenue to help meet its fixed costs on capacity made available to supply the customer's contract demand during the term of the contract. A minimum bill which the customer was not obligated to pay throughout the contract term,

but only until he might decide to terminate or reduce his actual power use, obviously would not serve this purpose.

* * *

For the Court to convert the ten-year term of Mobil's contract to pay the minimum bill portion of the rates into a term of six years and ten months, as Mobil requests, would represent judicial review and modification of TVA's rates just as clearly as would a judicial change in the level of the rates. It would also be incompatible with section 10 of the TVA Act, which expressly authorizes TVA to enter into power contracts "for a term not exceeding twenty years." Mobil's contention would also require the Court itself to fix new rates applicable to Mobil's actual use of power during the remaining

> three years and two months of the contract term (Complaint, prayer 3), even though TVA has already fixed the applicable rate in the amount of the minimum bill [at 508, 509].

The court further pointed out that even if the contract were viewed separately from TVA's authority to set rates the result would be the same. It noted in this connection that under an availability contract such as that involved between TVA and its directly served customers, the supplier simply agrees to make power available and the customer agrees to pay for such availability in accordance with the contract price terms whether the customer actually uses the power or not.

The Mobil court noted that minimum bill provisions in power availability contracts have been uniformly upheld and enforced on this basis, and in this connection cited Gatineau Power Co. v. Fraser Companies, Ltd. [1941] 2 D.L.R. 487 (Can. 1940); Oliver-Mercer Elec. Coop., Inc. v. Fisher, 146 N.W.2d 346 (N.D. 1966); San Joaquin Light & Power Corp. v. Costaloupes, 274 P. 84 (Cal. 1929); Marin Water & Power Co. v. Town of Sausalito, 143 P. 767 (Cal. 1914); Beck v. Indianapolis Light & Power Co., 76

N.E. 312 (Ind. Ct. App. 1905); Gould v. Edison Elec. Illuminating Co., 60 N.Y.S. 559 (Sup. Ct. 1899); and 22 Am. Jur. 2d Damages §§ 212-213, at 297-99 (1965).

The Mobil court also referred to the well-known rule, citing United States v. San Francisco, 310 U.S. 16, 29-31 (1940), and Lyle Cushion Co. v. McKendrick, 204 F.2d 609, 612 (5th Cir. 1953), that a party who has accepted the benefits of a contract over a portion of the contract term cannot escape its burdens.

The Carborundum Company, seeking to avoid the same type of minimum payment obligations for the term of its TVA power contract, as had Mobil, filed suit in 1980. In its opinion in favor of TVA, the district court expressed its view that the issues in the case had been carefully and thoroughly reviewed and correctly decided in the Mobil case. The court further explained that the minimum payment obligation "is simply an integral portion of the rates which TVA has fixed, pursuant to express congressional authority, for electric service to industries, enforceable and collectible during the term of the contract." Carborundum Co. v. Tennessee Valley Authority, 521 F. Supp. 590, 594 (1981). On October 22, 1982, the

United States Court of Appeals for the Sixth Circuit affirmed the judgment of the district court in all respects for the reasons that had been set forth by the Chief Judge of the district court.

The protection, which the courts have recognized as being needed by a power supplier when a customer discontinues or reduces its power takings, is discussed in Caywood, Electric Utility Rate Economics ch. 3, "The Tariff" (6th printing 1972):

> [Rate] Schedules for larger loads in particular carry term provisions which require that the customer sign a contract for a specified period during which he is committed to certain minimum payments. Such provision is, of course, protection for the utility against idle facilities [at 65].

In an earlier discussion of utility pricing (ch. 2, "The Price Structure"), Caywood lists a number of items influencing rate design, two of which he states as follows:

> 17. The larger the load and the lower the price, the more ratchet and term protection the utility needs

> against loss of load and resulting idle facilities.

* * *

> 20. It is impossible to make prices high enough for short terms for the large load unless the load can be readily replaced [at 33].

As explained by Mr. Parris, even with minimum payment obligations for the term of the contract, TVA takes the risk that fixed charges may not be recoverable after the end of the contract term if the customer elects not to renew the contract and its load cannot be immediately replaced. The minimum payment portion of TVA's rates may thus work to TVA's advantage in some circumstances and to its disadvantage in others. The basic fairness of this approach was specifically considered and approved by Congress in 1953, when it amended the Atomic Energy Act (67 Stat. 182) to authorize AEC to enter into very large contracts (with TVA and two private utility groups) which provided for cancellation charges equivalent to minimum bills following any cessation or reduction by AEC of actual power use. The amendment was approved after it

was made clear during congressional committee hearings that such payments by AEC to TVA might continue for four years and three months after cessation of power use, and entail payments to TVA during such period of as much as $130 million.

The hearings included the following colloquy between Representative Yates and Mr. Cook of AEC:

> Mr. YATES. Let us go back to TVA for a moment. Suppose TVA can shift power over to other Government installations or non-Government users, will there be a diminution in your cancellation cost?
>
> * * *
>
> Mr. COOK. The cancellation charge with TVA is based upon their normal load growth, an estimate of how long it would take them to absorb any power that we canceled into their normal load growth of their system. It provides for a continuation of the demand charge during that period, so

that they, in turn, can make a return to the Government as they are required by law to amortize their facilities.

Mr. YATES. Then what you are saying is this. In the event that TVA can shift their power, you will still have to pay the charges to them. It is based upon their estimate--that is, their charges are presently based upon an estimate as to what their loss will be, but in the event that their loss is not so great, in the event that they are able to shift it over to other users, would you nevertheless have to pay those costs to TVA?

Mr. COOK. That is right. But in the event that it takes them longer than the estimate, based upon their normal load growth, we would not pay more

[Hearings on the Second Independent Offices Appropriations for 1954 Before a Subcomm. of the House Comm.

on Appropriations, 83d Cong., 1st Sess., pt. 1, at 361 (1953)].

In this regard, the necessity for providing protection for the electric power suppliers building capacity to serve AEC facilities was pointed out by the Joint Committee on Atomic Energy, in S. Rep. No. 477, 83d Cong., 1st Sess. (1953), which accompanied the proposed legislation referred to above. The report, in explaining why such contractual arrangements were necessary, pointed out that if the power was not used by the AEC:

> [T]he utilities would have to find other users for the power in the area. Since the gaseous diffusion plants, when in full operation, will consume as much energy in a year as New York City would consume in 3 years, or three-fourths as much energy as the iron and steel industry is estimated to need in 1955, or 70 percent of the requirements of the chemical industries, or about one-quarter of the energy used in homes and farms of the entire Nation, the suppliers may have considerable

> difficulty in finding substitute users for this energy in the event the Commission should cancel the contracts.
>
> The estimated normal growth of power use in the three geographic areas is about 6 percent per year, and these suppliers probably could not immediately absorb the extra capacity. Therefore, some adequate cancellation payment provision is needed in the event that the Government should cease to purchase the power from these facilities [at 2].

Conditions of the very kind that were considered when AEC was given authorization to enter into such contractual arrangements have now occurred, although with more severe consequences for TVA (and thus the ratepayers of the region) than contemplated at the time the existing contracts were entered into for supplying power for DOE facilities at Oak Ridge and Paducah.

Tremendous sums of money have been spent by TVA to provide the capacity necessary to supply the very large amounts

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of power requested and contracted for these facilities. As a result of rapidly escalating costs resulting from the inflation affecting the Nation's economy for several years, the cost of providing such capacity has been much higher than originally projected. However, DOE's substantial operational cutbacks are resulting in significant present and future reductions in the amount of power being used at the facilities. This comes at a time when power loads other than DOE are only projected to increase by 1-2½ percent a year as opposed to past growth of 6-8 percent annually. As a result of these conditions, the capacity charges, or minimum payment obligations, of DOE under the existing contracts are not even sufficient to cover the funds that have been expended by TVA to provide generating facilities to meet present contract demands, much less adequate to help offset those continuing fixed facility costs that must be borne by TVA ratepayers after the expiration of the existing contracts. Present projections are that renewal contracts will be for significantly lower contract demands.

In conclusion, we appreciate the opportunity to explain how TVA through long-term contractual arrangements and minimum payment obligations attempts under its agreements

with directly served customers to recover at least a portion of those fixed costs that are incurred in providing facilities to provide the amounts of power requested by those customers. Otherwise, as pointed out by Mr. Parris, such costs would have to be shifted unfairly to other customers through higher rates. This would substantially impact the ratepayers of the region in the case of DOE, because of its large power requirements. We would be happy to provide any further information or data that would aid this subcommittee in examining these matters.

STATEMENT OF

ROBERT D. THORINGTON, COUNSEL FOR

THE ALABAMA MUNICIPAL ELECTRIC AUTHORITY

BEFORE THE
SUBCOMMITTEE ON REGIONAL AND
COMMUNITY DEVELOPMENT OF THE
COMMITTEE ON ENVIRONMENTAL AND PUBLIC WORKS

UNITED STATES SENATE

November 14, 1983

I am pleased to have the opportunity to supplement my testimony to your subcommittee concerning our efforts towards a solution to the problem you are considering today. I am counsel for the Alabama Municipal Electric Association, a group consisting of a number of municipally-owned electric utility systems in Alabama. Along with colleagues representing other municipal systems in Mississippi and Florida, I have been involved over the last two years in a frustrating and so far fruitless effort at negotiation with officials of the Tennessee Valley Authority ("TVA"), the Department of Energy ("DOE"), and the Southeastern Power Administration ("SEPA"), a power marketing agency within DOE. The gist of our efforts has been to try to arrange for a purchase of some of the excess energy for which DOE has contracted. If we could buy 600-700 Mw of power between now and 1991, the date when DOE, under its contract with TVA, can

reduce its commitment, we will be sparing the government and the people of this country a needless billion dollar expense, and will be putting to use now idle generating capacity of the TVA.

It disturbs me that the government agencies involved have shown little initiative on their own to find a way to eliminate this wasteful spending. Our own group has made a considerable effort, locating a group of willing purchasers for some of the idle 1400 Mw of capacity; doing extensive work on the legal issues raised by the proposed purchase; and initiating a number of contacts with the various agencies. Despite repeated promises to look into the proposal, there has been no progress in almost two years. While some individuals have been helpful, in other instances agencies have, after lengthy delay, taken positions that impede any further effort on our part to work out the legal and practical details of a sale. TVA in particular has taken a short-sighted and greedy approach, refusing to allow DOE to mitigate its expenses by selling the power. Under any version of the proposal we have made, TVA would be paid what it is due under the DOE contract, and we cannot see any legitimate reason for its failure to cooperate. TVA apparently wants to get the money from DOE and in addition try to sell off TVA's further excess generating capacity.

The cost of our effort at this point appears to be well over $100,000, with nothing to show for it. Our members

cannot afford to continue their effort indefinitely. Electric utilities, which must provide capacity to serve their customers, must plan ahead, and if our possibility does not materialize, sooner or later they must decide to find another source of power. Indeed, in August of 1982, the Jacksonville Electric Authority dropped out of our group, deciding instead to buy 600 Mw from the Southern system. As the attached letter of November 17, 1983 indicates, this decision was taken because Jacksonville had reached the point where it had to decide among the alternative sources of power that were available. In early 1982 Jacksonville told the government agencies of its need for a prompt decision, but nothing happened. Now Jacksonville is no longer interested in the DOE power.

Our proposed purchase of some of DOE's excess power has seemed to us to be an obvious way to cut down an enormous expense to taxpayers, as well as reducing the cost of DOE's uranium enrichment services. However, our group cannot go any further with this proposal unless we have a commitment at the highest levels of government to make every effort to work with our proposal and ensure the cooperation of the governmental entities in facing up to the legal and practical problems involved. Unless a firm guiding hand appears, we will have to look elsewhere for our supply of power, and the opportunity we have offered to reduce DOE's costly and wasteful payments to TVA will be lost.

I would like to outline our proposal, along with a brief indication of what the major hurdles and proposed solutions are. I have also included a chronology of our contacts and negotiations with TVA, DOE, and SEPA up to this point, so that you can better appreciate our impasse.

As you know, DOE in 1967 contracted with TVA to buy all of the electricity for its uranium enrichment facility at Oak Ridge, Tennessee, and part of the electricity for its uranium enrichment facility at Paducah, Kentucky. A standard clause required DOE to pay a demand charge based on the amount of generating capacity TVA committed to supplying DOE. This amount was owed whether or not DOE ever took the electricity it was entitled to at a particular time. It represents essentially the high fixed costs of electric plant.

DOE, until the mid-1970's, expected business in uranium enrichment to continue to grow, and continually raised the amount of electricity it could purchase from TVA. Its estimates have turned out to be drastically wrong. Its uranium enrichment capacity, which was once used at 100%, is now used at much less. Thirty-four percent of the TVA electricity is unused. Also, there is worldwide an excess supply of uranium enrichment capacity, and former customers are turning to other suppliers of this service because the United States costs are far above the current market. An attached article from the November 17, 1983 Energy Daily

reports cancellations of contracts with DOE in favor of enrichment by Italian firms. DOE's charge was about $150 per separative work unit ("SWU"). The Italian firms were reported to be charging $80 per SWU. The cost of electricity, including the demand charge, is a major component (about 25%) of DOE's costs, which DOE is required by law to recover in its charges. The elevated charges are having serious repercussions not only on the recovery of costs by DOE, but on United States efforts to control nuclear proliferation.

In the midst of this alarming situation, DOE is obligated by its contracts with TVA to continue to pay an enormous demand charge for electricity it does not ever expect to need. It is undisputed that DOE will pay well over $100,000,000 each year for the unused demand charge. DOE has reduced its demand for 1991, the first year it is permitted to do so under the contracts, and again in 1992. Between now and 1992, DOE can be expected to pay TVA more than $1.1 billion for maintaining capacity to supply electricity that DOE will never use.

Our group became aware of this situation in the fall of 1981. Since that time, as I will presently describe, we have examined the situation with DOE, TVA and SEPA from a legal viewpoint.

The most significant legal stumbling block to purchase is a 1959 amendment to the statute governing TVA, which prohibits it from being directly or indirectly a source

of electric power to entities outside the area supplied by TVA as of July 1, 1957. 16 U.S.C. §831n-4 ("Section 15d"). None of the interested municipal purchasers are within this area. In addition, none of the potential municipal purchasers are directly electrically interconnected to TVA, so that, even if the Section 15d "wall" were crossed, we would have to arrange for transmission of the power (also known as "wheeling") by other electric utilities in the Southeast. Although they may already be under a legal or contractual obligation to wheel, at least some of these systems are currently experiencing an excess of electric generation, and view themselves in competition with TVA, so that there is some concern that they may not be as cooperative as we might hope. (I want to stress that no one disputes that the demand charges will be paid, and that TVA's testimony justifying them is beside the point.)

We developed three approaches to the legal problem. First, DOE should be considered the purchaser and therefore the owner of the power. If DOE then turns around and sells to us, DOE and not TVA is selling the power. Alternatively, DOE as owner of the power could direct some of its contractual entitlement of power to SEPA, which could then sell it to us.

A major snag here is that the contracts appear to require TVA's consent. Article 15 of the TVA/AEC contract

(we refer to the Oak Ridge contract, but the Paducah contract appears to be substantially identical) provides that:

> AEC shall not sell or otherwise dispose of any of the power supplied hereunder except by agreement of the parties....

Thus, disposal of the power would appear to require TVA's consent. This is true whether transfer of the delivery to SEPA is regarded as "disposal", or whether it is DOE's subsequent sale of the power that is regarded as "disposal". In addition, Article 19 of the contract provides:

> This contract is assignable by either party with the written consent of the other.

Under the scenario described, the receipt by SEPA instead of DOE could be considered a partial assignment, in which case TVA's consent would be required. (On the other hand, if DOE asks SEPA to act as its agent, receiving and reselling the power for DOE's account, then TVA's consent would not be required under this provision, although it would still be under Articles 15 and 4.) Article 4 of the Oak Ridge contract provides:

> Except as mutually agreed in writing, power supplied by TVA shall be delivered to the locations (herein collectively referred to as the "points of delivery")....

The contract goes on to define the delivery points. A similar provision occurs in the Paducah contract. Under either theory (agency or assignment), the delivery points would have to be changed. Again, TVA's consent would be required.

TVA has categorically withheld its consent to this proposal. TVA's position is that such an arrangement -- a sale of DOE or SEPA energy from within the TVA area -- might be viewed by the surrounding investor-owned utilities as a violation of the 1959 Act. To be more accurate, as reported on page 2 of a July 29, 1982 memorandum (attached) of a July 23, 1982 meeting between TVA and DOE, TVA's position is that "the neighboring utilities would perceive the arrangement as TVA indirectly selling the power." TVA also stated, as reported in this memorandum, that even if DOE got the concurrence of all the neighboring utilities, the procedure would still be close enought to a perceived violation of the 1959 Act to be a problem.

TVA's position is totally inconsistent on this point. In 1981 and 1982, TVA explored the possibility of a long-term sale of 1000 MW of electricity to General Public Utilities ("GPU"), located in Pennsylvania and New Jersey. During January to March 1980, TVA apparently even delivered, to a neighboring utility, power which in turn was bought and sold until it reached GPU. TVA did this under an exception clause in Section 15d which allows exchange arrangements with systems that were interconnected with TVA as of July 1, 1957. These utilities have then sold the power to others. TVA has not in the past considered such indirect supply arrangements to be a violation of Section 15d, contrary to the position taken here. Its assessment of the legal situation is

described and confirmed in a report of the General Accounting Office, GAO/EMD-82-129, dated September 30, 1982 (attached) on the subject of making TVA power available to GPU through exchange arrangements. The GAO agreed with TVA's conclusion that the 1959 Act

> does not preclude systems that have exchange arrangements with TVA from entering into agreeements to sell power to systems that do not have arrangements with TVA. As a result, transactions resulting from such arrangements involve additional contractual obligations over those involved in selling power from one system to another. In testimony before the Energy and Water Development Subcommittee of the House Appropriations Committee in March 1982, TVA Chairman Charles Dean stated that the TVA Act would not preclude TVA from exchanging power with neighboring utilities who in turn could sell it to other utilities including GPU. For example, during the months January to March 1980, power was delivered to GPU through a series of buy and sell arrangements between TVA, American, Allegheny, and GPU.

We note that this report was reviewed and approved by TVA.

This same exception could be used, in our situation, to allow power to exit from the TVA service territory. An exchange contract between TVA and the Department of the Interior ("DOI"), in its capacity as administrator of the dams from which SEPA now markets power (attached), was signed in 1948. Thus SEPA should be considered an entity with which TVA could exchange power. (We note that TVA, in listing such entities in Attachment 3 to the July 29, 1982 DOE memorandum, omitted SEPA.) Other systems in the Southeast might also enter into an exchange arrangement and then resell the power.

But, under the contract, TVA must consent before any of this may take place. And TVA is not willing to consent.

Mr. LaGrone of DOE, Oak Ridge, reached the same conclusion, when he stated in his prepared testomy to you that

> with regard to the proposals to dispose of the excess TVA power for use in areas outside the TVA area ... there is no substantial legal impediment to such disposition other than the contractual requirement that TVA consent to such disposition.

Statement from Joe LaGrone, November 14, 1983, at 6.

There appears to be a second motive at work here. As stated in an August 9, 1982 letter (attached) from DOE to me, TVA's position in the TVA/DOE meeting was that:

> if their inter-utility agreements should permit power exchanges, TVA would market the excess power on their system while holding DOE and other customers to contract demand in order to minimize the loss of revenue to TVA.

This same position is expressed in Attachment 2 of the July 29, 1983 DOE memorandum, where TVA's position is reported as follows:

> In the event of reduction in use at DOE's facilities there would be continuing minimum payment obligations for the term of the contract even though TVA found a market for the power not being used.

Keep in mind that TVA has a considerable excess of generating capacity at the moment. Thus, its customers are paying for generating plant they do not currently use. (This situation is prevalent for most utilities in the Southeast at

the present time.) TVA's position apparently is that it would prefer to keep DOE as a captive customer even if DOE could resell the power and reduce its expenses without damage to TVA. As Mr. Sanger, General Counsel for TVA, stated in March of 1982:

> [A]s long as TVA has on its system capacity that it is not itself disposing of, by permitting DOE, by waiving that contract provision, we would be in effect cutting DOE's losses and maximizing our own.

Hearing before the Subcommittee on Energy Research and Production of the Committee on Science and Technology, U.S. House of Representatives, 97th Cong., 2d Sess, March 8, 1982 at p. 62. TVA apparently prefers to force taxpayers and uranium enrichment customers to pay higher costs, through the DOE demand charge, even while TVA tries to find other purchasers for additional excess capacity to reduce costs further. Thus TVA is essentially insisting on a double recovery, since it would not lose anything if DOE resold the power; and on using its withholding of consent to compel DOE to subsidize the effect of its overbuilding of generation.

On the issue of TVA's ability to sell excess power elsewhere, we note an article in the March 8, 1982 Electrical Week (attached) comparing the success of the utilities surrounding TVA in selling their excess. TVA Director Richard Freeman is quoted as saying "in effect, we are surrounded and we can't get our surplus out." To be fair to TVA, at least part of the problem is due to the effect of

Section 15d, and to the likely hostility of the neighboring utilities. Yet, as its approach towards sales to GPU shows, TVA does not really view the Section 15d prohibition as insuperable.

In any event, the taxpayers, DOE and the nation's uranium enrichment business should not be made to suffer because TVA has lost out in its efforts to sell excess capacity. Indeed, TVA's policy is especially short-sighted because if DOE loses its present customers because of exorbitant costs, in the long run DOE may have little or no need for TVA electricity, because there may be little or no sale of enrichment services. TVA would then have even less demand for its excess generating capacity.

Our second scenario for purchasing power relies on SEPA, an agency within DOE. SEPA markets the hydroelectric power generated at U.S. Army Corps of Engineers dams within a ten state region in the Southeast that includes Tennessee, Mississippi, Alabama and Florida. SEPA currently delivers to TVA 615 Mw of the power from its Cumberland system of projects, which are located in Kentucky and Tennessee. SEPA could take back its present allocation to TVA and allocate it instead to the municipal purchasers. It would be SEPA power that would leave the TVA area. TVA would take an equivalent amount of power back from the DOE contract obligation. The purchasing cities would still have to find a way to

compensate TVA (either directly or through SEPA) for the difference in cost.

Unfortunately, TVA's cooperation would still be required, to make the necessary changes in SEPA allocation, to change to DOE contract, and to wheel SEPA power. Its cooperation might be easier to obtain, however, as there is no question that it can legally wheel power, even under the restriction of Section 15d.

We have run into another problem here. SEPA's authority, in our view, is not rigidly defined by statute. SEPA was established by the Secretary of Interior, pursuant to his authority under §5 of the Flood Control Act of 1944, 16 U.S.C. §825s. Because SEPA is established only by internal DOE (formerly DOI) orders, which permit DOE some discretion, there should be inherent authority in the Department of Energy to authorize SEPA to act in this way. SEPA apparently disagrees, taking the narrow view that its authority is limited to the marketing of power from hydroelectric projects, as described in Section 5 of the Flood Control Act.

Our third approach is based on the provisions of the Federal Property and Administrative Services Act of 1949, 40 U.S.C. §§471, et seq. DOE's electricity entitlement could be determined to be excess property. This statute, which governs the disposal of property excess to the government's needs, could be viewed as overriding the otherwise applicable provision of Section 15d. Section 15d limits

TVA sales "[u]nless otherwise specifically authorized by Act of Congress...;" we believe the Federal Property and Administrative Services Act provides such an express exception. Under this Act, DOE would first have to attempt to dispose of the electricity to other Federal government agencies. If they did not take it, 40 U.S.C. §484 would apply, and the municipal systems could pay a fair, market value price. 40 U.S.C. §484(e)(3)(H). Section 485(c) provides that when the property transferred or disposed of was acquired by the use of funds not from the general fund, then the net proceeds of the disposition or transfer shall be credited to the reimbursable fund, or paid to the Federal agency which determined such property to be excess. Thus, depending on how the original energy purchases were funded, DOE could be credited with the purchases. Again here, however, TVA's consent would still be required, insofar as DOE would be disposing of power obtained under the contract.

No matter how we have looked at it, our approaches to the legal problem require the agencies involved to take a positive attitude. We have been appalled at the lack of such an attitude, in the face of the billion dollar drain on DOE funds, as well as its ramifications for the nation's nuclear enrichment and safeguards programs.

Transmission of the electricity to our cities will involve negotiation with IOU's. Although the IOU's should in principle cooperate, SEPA might well be able to smooth this process. SEPA has contracts with the various utilities in

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the region for wheeling of the power SEPA markets pursuant to Section 5 of the Flood Control Act of 1944. If, under our proposal I, TVA assigns some of its power to SEPA, or if, under our proposal II, SEPA takes back power from TVA, SEPA's existing contracts might fairly easily resolve what could otherwise become complicated negotiations. Some of the municipalities in our group have had contractual arrangement in place that would probably have taken care of all wheeling beyond that. Regardless of whether SEPA is involved, the concerted efforts of DOE supporting prompt and fair negotiation of wheeling will certainly be effective in arranging a sale of excess DOE electricity.

A chronology of our attempts to get TVA, DOE and SEPA to address our proposed purchase of some of the excess DOE entitlement will underscore the points made above.

Our group first considered the possibility of a purchase in the fall of 1981, and we began looking for additional municipal systems that might be interested. After some preliminary work, we determined what issues were involved, and that some of the agencies might be hostile to the solutions we could propose. Accordingly, on December 23, 1981, I requested a meeting with Secretary of Energy Edwards to explain our proposal and ask for his support. On February 26, 1982, two officials from DOE Oak Ridge met with representatives of the municipals in Atlanta. Subsequently, on March 23, 1982, representatives of AMEA met with officials of SEPA at SEPA's headquarters in Elberton, Georgia.

On April 28, 1982, representatives of municipal groups, DOE and SEPA met with Secretary Edwards in Washington. We presented our proposals, indicating the problems and why we thought they were not insurmountable. We stressed the need for cooperation from TVA and SEPA, and made it clear that time was of the essence. We believed a response would be supplied by June 1, 1982.

By letter of June 17, 1982, DOE informed me that a working group had been formed to study the proposal, including the legal questions we had already raised. DOE said it had met with TVA, and that TVA promised a response by mid-July. I responded by letter of June 30, 1982, again stressing the need for a definitive response, this time by August 2, 1982. An August 9, 1982 letter from DOE revealed that TVA had taken the position, in a July 23, 1982 meeting, that Section 15d, which prevented them from agreeing to any arrangement that would result in their selling power directly or indirectly outside their territorial limits, might include what we had proposed. This letter also stated that TVA's position was to market its other excess power, if it could, while holding DOE to its contract payments. It also stated that TVA might, under an exception to the Section 15d restriction, be able to cooperate with a generating utility; but that any such sales could not displace sales by a current supplier. This approach could not resolve the interest of the Alabama group, which currently purchases all its power from an existing supplier. As for Jacksonville, which

generated its own power, it was not interconnected with TVA as of July 1, 1957 and could not get power from TVA. In other words, TVA's purported exception was meaningless.

This response was, needless to say, not helpful in the least. Moreover, it indicated no change from the position we had informally determined nearly a year before. It was at this point that Jacksonville decided it could not wait any longer and decided to buy power from the Southern system.

In September, 1982, our Washington attorney contacted DOE. An officer apparently newly in charge of the proposal asked us to propose specific price and quantity, apparently unaware that we had discussed these matters back in April.

I called DOE in October, and twice in November, requesting word of any further action on our proposal. From December, 1982 to May, 1983 efforts were made to keep the matter active with DOE, but without success. We finally resorted to a letter to Mr. Danny Boggs, who at that time was special assistant to the President for energy policy. I met with Mr. Boggs on June 14, 1983. We exchanged telephone calls over the next few weeks. Mr. Boggs referred the matter to Earl Gjelde, special assistant to the Secretary of Energy, with whom I met on August 26, 1983. During this period, scheduled conferences with DOE were postponed. As of the date of these hearings no meeting with DOE had taken place.

As you can see, after some initial contacts, absolutely nothing has been done about the proposed sale. A comparison of the July 29, 1982 memorandum and the position of DOE in this hearing shows that the position of the government has not changed in the slightest in over fifteen months. In a private business situation, unsheltered by the government, DOE's enrichment operations might be bankrupt by now.

As I said at the beginning of my statement, this state of affairs is discouraging in the extreme. We firmly believe that it would behoove the agencies involved to focus their attention on whether this sale of excess entitlement can in fact be arranged. It will require a change in attitude by TVA and SEPA, and considerably more commitment by DOE. We have come to believe that only attention at the level of the Secretary of Energy and the TVA Board can move our negotiations along. In order to save the taxpayers hundreds of millions of dollars and lower the cost of DOE's uranium enrichment services, we believe this effort is worth it.

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AGREEMENT BETWEEN THE SECRETARY OF THE INTERIOR
AND THE TENNESSEE VALLEY AUTHORITY

This agreement is made as of December 18, 1948 between the Secretary of the Interior (hereinafter referred to as Interior) and the Tennessee Valley Authority (hereinafter referred to as Authority).

The Corps of Engineers of the Department of the Army (hereinafter referred to as Army) has under construction three multiple purpose dam and reservoir projects on the Cumberland River and its tributaries, the Center Hill project on the Caney Fork River, the Dale Hollow project on the Obey River, and the Wolf Creek project on the Cumberland River (hereinafter collectively referred to as the Cumberland projects). Under section 5 of the Flood Control Act of 1944 (58 Stat. 887,890; 16 U.S.C., 1946 ed., sec. 825s), Interior is charged with the duty of disposing of the hydroelectric power which is generated at the projects and is not needed in their operation.

Under said Act Interior is required to dispose of the power in such manner as to encourage the most widespread use thereof at the lowest possible rates to consumers consistent with sound business principles, and with regard to recovering the cost of producing and transmitting the power, including amortization of the capital investment over a reasonable period of years, and with preference being given to public bodies and cooperatives.

Approximately 70 percent of the Cumberland Basin lies within the area being served with electricity produced at Authority's plants, and approximately 80 percent of the entire electric power requirements of the Cumberland Basin is being supplied by Authority. In its resource development program, which includes the widespread distribution of power at low cost to the consumer, Authority requires

additional sources of electric power in order to supply adequately the growing needs for electricity in its service area, including that portion of the service area within the Cumberland Basin. Because of the geographic position of Authority's power system, the Cumberland projects, would contribute most effectively to the purposes of Section 5 of the Flood Control Act of 1944 if the entire power output of the projects were sold to Authority and marketed over its system.

In the light of these facts, Interior has determined that the most practicable plan for the disposition of the surplus power generated at the Cumberland projects in conformity with the requirements of section 5 of the Flood Control Act of December 22, 1944, would be the sale of the power to Authority, and a preliminary agreement was entered into between Interior and Authority in a letter dated February 10, 1947. The arrangements provided for therein are developed in more detail herein.

Therefore, Interior and Authority agree as follows:

1. Term: This agreement shall be effective upon its execution and, shall continue in effect until cancelled by mutual agreement or by either party upon written notice given not less than 10 years prior to the date of cancellation specified therein, the cancellation to be effective not earlier than December 18, 1968.

2. Operation of the Cumberland Projects: The Cumberland projects shall be operated in accordance with an operating agreement between Authority and Army. It is contemplated that the operating agreement will provide, among other things, for the storage and release of water as requested by Authority for optimum production of power and energy in conjunction with Authority's power system, subject to the flood control and other operating requirements of Army, and for adequate operating

records, including records of the generation of power at the Cumberland projects and deliveries hereunder.

3. Power Supply: During the term of this agreement the total power and energy generated at the Cumberland projects less the power and energy required by Army in connection with the operation of the projects shall be delivered to Authority in the form of 3-phase alternating current at a frequency of approximately 60 cycles per second at the outgoing terminals of the switchyards of these projects. If at any time the power and energy generated at any of these projects is less than that required by Army in connection with the operation of the project, Authority shall deliver at the outgoing terminals of the switchyard of that project sufficient power and energy to compensate for the deficit.

4. Schedule of Rates and Charges and Relationship of Payments to Water Conditions:

(a) The annual payments to Interior by Authority for power delivered hereunder, as specified in subsection (b) of this section, are estimated to produce average annual payments, over a period of years in which the amount and distribution of the power available at the Cumberland projects is normal as indicated by long-time stream flow records, as set forth in the following schedule, showing such information for the individual projects, together with the number of generating units and capacity which will be available at each upon completion thereof as now scheduled:

Project	Installed Capacity No. of Units	KW	Estimated Average Annual Payments
Dale Hollow	2	36,000	$500,000
Center Hill	3	135,000	1,000,000
Wolf Creek	6	270,000	2,000,000
Total	11	441,000	$3,500,000

(b) The basic annual charge shall be $425,000 beginning with the initial commercial operation of the first generating unit at Dale Hollow, and shall be increased by $75,000 upon the initial commercial operation of the second Dale Hollow generating unit, by $700,000 upon the initial commercial operation of the first generating unit at Center Hill, by $1,250,000 upon the initial commercial operation of the first generating unit at Wolf Creek, and by $150,000 upon the initial commercial operation of each additional generating unit at Center Hill or Wolf Creek. If a third generating unit is installed at Dale Hollow, such appropriate addition to the basic annual charge as the parties agree upon shall be made. The initial basic annual charge and any increases thereof are for a full year (ending June 30) and shall be prorated to reflect the dates of initial operation of units placed in service during the year.

(c) The basic annual charge shall be the applicable charge for each year (ending June 30) in which the average unregulated flow of water into the Wolf Creek reservoir (or at the dam site, prior to closure of the dam) is between 8,500 and 9,250 c.f.s. The basic annual charge shall be adjusted to determine the applicable charge in particular years in accordance with variations in the said flow of water, as follows: For each 750 c.f.s. or fraction thereof by which the said flow of water for the year is greater than 9,250 c.f.s. the applicable charge shall be greater by one-seventh than the basic annual charge; for each 500 c.f.s. or fraction thereof by which the said flow of water for the year is less than 8,500 c.f.s. the applicable charge shall be less by one-seventh than the basic annual charge; provided that the applicable charge for any year shall be not less than three-sevenths nor more than eleven-sevenths of the basic annual charge.

(d) The parties will establish from time to time the basis for facilitating the determination of the annual inflow into Wolf Creek reservoir, for purposes hereof.

(e) It is the intention of the parties that applicable charges to Authority shall cover all fair and reasonable costs of producing power and energy, including the amortization over a reasonable period of years of the capital invested therein and allocated to power, and at the same time shall effectuate the policy of Congress to dispose of the power in such manner as to encourage the most widespread use thereof at the lowest possible rates consistent with sound business principles. Therefore, the parties will review the results of operations and the determination of applicable charges, at the request of either party, but not at intervals shorter than five years unless otherwise agreed, in order to determine jointly whether a change in the applicable charges is necessary to achieve the foregoing objectives. Any changes so agreed upon shall be put into effect as soon as practicable.

5. Approval of Schedule of Rates and Charges: The schedule of rates and charges provided for in this agreement shall become effective upon confirmation and approval by the Federal Power Commission, and shall apply retroactively to December 18, 1948.

6. Payments by Authority: As soon as practicable after the end of each fiscal year, Interior shall determine the applicable charge for such year in accordance with the provisions of section 4, and shall render a bill to Authority therefor. The amount due shall be payable within 90 days. Upon termination of this agreement, final payment shall be made by Authority of any amounts then due and unpaid.

7. Extension of Authority's Transmission System: Authority agrees to design, construct, operate and maintain all of the necessary transmission facilities to interconnect the Cumberland projects with the Authority's power system. The parties agree that, with the completion of such facilities, Authority's power will be available for use in accordance with the provisions of the TVA Act in that portion of Kentucky in the general vicinity of the Cumberland projects.

8. Uncontrollable Forces: Neither party shall be considered to be in default in respect to any obligation under this contract if prevented from fulfilling such obligation by reason of uncontrollable forces. For the purposes of this contract, the term "uncontrollable forces" means any cause beyond the control of the party affected, including, but not limited to, failure of facilities, flood, backwater caused by flood, earthquake, storm, lightning, fire, epidemic, war, riot, civil disturbance, labor disturbance, sabotage, and restraint by court or public authority, which by exercise of due diligence and foresight such party could not reasonably have been expected to avoid. Either party rendered unable to fulfill any obligation by reason of uncontrollable forces shall exercise due diligence to remove such inability with all reasonable dispatch.

9. Waivers: Any waiver at any time by either party hereto of its rights with respect to a default or any other matter arising in connection with this contract shall not be deemed to be a waiver with respect to any subsequent default or matter.

10. Notices: Communications under this agreement shall be addressed by the Secretary to the Manager of Power, Tennessee Valley Authority, Chattanooga, Tennessee, on behalf of Authority and by the Authority to the Director of the Division of Power, Department of the Interior, Washington, D. C. The designation of

the person to be notified or the address of such person may be changed by either party at any time, or from time to time, by similar notice.

11. Appropriations: To the extent that fulfillment of the obligations of either party hereunder is dependent upon the availability of appropriated funds, performance by such party shall be excused, and no liability shall attach, if it is prevented from fulfilling such obligations because of the failure of Congress to provide the necessary appropriations.

In witness whereof, this agreement has been executed by the parties as of December 18, 1948

(s) George F. Cant
General Manager
Tennessee Valley Authority

(s) J. A. Krug
Secretary of the Interior

Approved by TVA
Board of Directors
March 29, 1949
(s) Leona LeRoy
Assistant Secretary

65932

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF THE SECRETARY
WASHINGTON 25, D. C.

May 7, 1952

Dear Sir:

In accordance with Paragraph 10, Notices, of an AGREEMENT BETWEEN THE SECRETARY OF THE INTERIOR AND THE TENNESSEE VALLEY AUTHORITY (Iep-2; TV-6258A) you are notified to hereafter address all communications under this agreement to:

Administrator
Southeastern Power Administration
Elberton, Georgia

Sincerely yours,

(Sgd.) OSCAR L. CHAPMAN

Secretary of the Interior

Manager of Power
Tennessee Valley Authority
Chattanooga, Tennessee

ELECTRICAL WEEK
March 8, 1982

TVA BOWS TO SOUTHERN CO. ON EXPORT SALES, DEFERS THREE NUCLEAR PLANTS

Acknowledging that the Southern Co. had run circles around them in lining up sales of surplus capacity, members of the Tennessee Valley Authority board last week voted 2-1 to defer construction on three nuclear units totaling some 3,750 MW because no market could be found for the output. Director Richard Freeman, who voted for deferral, said flatly that efforts to save the units through power sales to other utilities had failed. He was joined in the vote by former TVA chairman S. David Freeman. Agency chairman Charles (Chili) Dean vainly sought to get his fellow directors to reassess the Valley's economic future and to take a more optimistic outlook toward export power sales. The vote came a week after the Southern Co. disclosed that it had lined up utility customers in Florida and Texas to take some 3,000 MW of capacity and related energy during periods it would have been surplus on the Southern Co. system (EWk, 1 March, 1).

In surprisingly candid remarks, the two Freemans on the TVA board acknowledged that the Southern Co. had bested TVA in disposing of its power surplus. "In effect, we are surrounded and we can't get our surplus out," Richard Freeman said in referring to the Southern Co. deals. He attributed TVA's disadvantages to a lack of interconnections. "Not surprisingly . . . these directly connecting utilities have no interest in wheeling our power to Florida or the Southwest."

S. David Freeman said that "TVA cannot dispose of any surplus power on a favorable basis without the cooperation of the Southern Co. (or, to the north, American Electric Power). These private power companies really have no interest in facilitating such sales by TVA. In fact, the Southern Co. has just signed a contract to supply sizeable quantities of electricity in the future to the very same utilities with whom we have been negotiating." The former TVA chairman said the Southern Co. did not refuse to wheel, explaining that the charges demanded for wheeling prevented TVA from making "economically practical arrangements." He insisted that the "public vs. private power tension" is "not foreign" to an explanation of TVA's power export failures.

In voting to defer the nuclear units, the board directed its staff to revive the option of going to coal-fired units. But the deferral discussion made it clear that any chances for new plant orders at TVA are slim. Nuclear units deferred are Hartsville-A1 and -A2 (1,233 MW each) and Yellow Creek-1 (1,285 MW).

Department of Energy
Oak Ridge Operations
P.O. Box E
Oak Ridge, Tennessee 37830

July 29, 1982

Files

DOE/TVA MEETING - JULY 23, 1982

R. J. Hart, Manager, ORO, and Hugh Parris, Manager of Power, TVA, together with other representatives of DOE and TVA met in Oak Ridge on July 23, 1982, to discuss a proposal advanced by DOE on June 9, 1982 for disposal of surplus capacity and energy under the TVA/DOE power contracts. The attendees are listed in Attachment 1.

The DOE proposal resulted from the desire of DOE to be relieved of all charges associated with capacity that will be excess to its needs during the 1980's. The proposal was specifically structured to accommodate a request made by a group of municipal utilities located in Alabama, Florida, and Mississippi (AFM) to the Secretary of DOE to purchase a firm block of 600-700 MW under contract with TVA but surplus to DOE's needs. The proposal was as follows:

DOE would pay TVA

1. capacity charges on the power sold to AFM as required by the TVA/DOE power contracts,

2. the energy charges on the energy scheduled to AFM as required under the DOE/TVA power contracts (the scheduled energy would include incremental transmission line losses, if any.),

3. the 5% in-lieu-of-tax, if required, and

4. a surcharge of 1 mill per kilowatt hour scheduled.

At the July 23, 1982 meeting TVA representatives said that the terms of the DOE proposal would violate the TVA Act; therefore, it was unacceptable. TVA's rationale concerning the unacceptability of the proposal is shown in Attachment 2.

With reference to page 3 of Attachment 2, and the point made by TVA that the municipal systems can obtain the needed capacity from systems other than TVA via customary utility transactions, DOE inquired if this would apply to Jacksonville Electric Authority. DOE noted that Jacksonville has its own generation and its purchases would result in supplanting oil-fired generation. If transmission arrangements could be made to wheel

the power to Jacksonville, it would not result in supplanting a load that would be served by a neighboring utility such as that proposed for Mississippi and Alabama municipalities. TVA responded to the effect that they did not have exchange power arrangements with Jacksonville on July 1, 1957; therefore, such an arrangement today would be perceived as violating the TVA Act (see Attachment 3).

DOE reminded TVA that its proposal was one that would not result in TVA directly selling the power but was an arrangement whereby DOE would be selling its surplus power. TVA responded that nevertheless the neighboring utilities would perceive the arrangement as TVA indirectly selling the power.

In response to DOE's suggestion that the neighboring utilities be approached about a selling arrangement, TVA said that even if DOE gets the concurrences among the TVA neighbors on such an arrangement, TVA would still be of the opinion that it violates the intent of the TVA Act.

DOE asked the TVA representatives if they were aware of a counter-proposal that TVA might offer DOE that would be acceptable to TVA. Parris said that he was not aware of any.

Finally, DOE asked TVA if it would consider a proposal from DOE concerning a definitive approach arrangement. (There might be other areas that DOE would like to explore concerning selling DOE surplus power.) TVA said that they would consider any proposal made by DOE. They were not optimistic that additional proposals would be acceptable to TVA.

E. R. Sullivan, Jr.
Deputy Assistant Manager for
Enriching Operations & Development

Attachment 1

TVA/DOE Meeting

July 23, 1982

Federal Office Building, Room B-044
Oak Ridge, Tennessee

TVA

H. G. Parris, Manager of Power
J. R. Durall, Assistant Manager of Power
E. H. Drum, Office of General Counsel
J. W. Cade, Chief, Direct Services Branch
S. D. Reynolds, Assistant Branch Chief, Direct Services Branch
M. R. Knauff, Supervisor, Federal and Utilities Contract Section

DOE-Oak Ridge Operations

R. J. Hart, Manager
E. R. Sullivan, Jr., Deputy Assistant Manager for Enriching Operations and Development
J. C. Hall, Deputy Chief Counsel
J. W. Morgan, Chief, Power Branch

DOE-Headquarters

D. A. Koss, Director, Construction and Facilities Management
L. A. Collamp, Assistant General Counsel for Regulatory Intervention and Power Marketing
J. E. Behrend, Office of Operations and Facility Reliability, Office of Deputy Assistant Secretary for Uranium Enrichment and Assessment

32-770 O - 84 - 9

Attachment 2

AGENDA

FURTHER DISCUSSION OF DOE TOPICS FROM JUNE 9, 1982 MEETING

- TVA recognizes that DOE's capacity requirements at Oak Ridge and Paducah are expected to remain significantly below that contractually available from TVA through 1989.

- TVA also recognizes that minimum payment obligations will continue for power contractually available and considers it an absolute requirement for minimum payment obligations to continue for the contract term.

  - TVA has expended exceedingly large sums to provide system facilities adequate to supply the amounts of power contracted for by DOE at Oak Ridge and Paducah.

  - These costs would have to be recovered from other consumers through higher rates if not recovered from DOE.

  - These minimum payments do not fully recover costs which have been incurred by TVA to supply DOE's contracted loads.

  - If DOE were relieved of minimum payment obligations, other large customers with reduced loads would demand similar treatment which, if given, would result in further improper shifting of costs to other consumers through higher rates.

- It was clearly understood by the parties when entering into contractual arrangements for TVA to serve DOE's facilities at Oak Ridge and Paducah that the power made available could not be resold by DOE and that in the event of reduction in use at DOE's facilities there would be continuing minimum payment obligations for the term of the contract even though TVA found a market for the power not being used.

o From time to time various electric systems outside the TVA service area have approached TVA with requests for power, similar to the request by municipal systems who recently approached Secretary Edwards seeking TVA power, which requests were denied on the basis of the territorial limitations established by Congress in 1959.

- The geographical availability of TVA power is governed by section 15d(a) of the TVA Act, which provides in pertinent part as follows:

> Unless otherwise specifically authorized by Act of Congress the Corporation shall make no contracts for the sale or delivery of power which would have the effect of making the Corporation or its distributors, directly or indirectly, a source of power supply outside the area for which the Corporation or its distributors were the primary source of power supply on July 1, 1957, and such additional area extending not more than five miles around the periphery of such area as may be necessary to care for the growth of the Corporation and its distributors within said area . . . .

- TVA has always sought, and continues to seek, to abide by these statutory restrictions (even when under pressure not to do so) and reaffirmed this commitment in a formal Board resolution on September 20, 1979.

o The municipal systems involved in this request for power presently have or can obtain access to the needed capacity from systems other than TVA via customary interutility transactions.

- The grant of authority to TVA to make exchange power arrangements with other power-generating organizations with which such arrangements were in effect on July 1, 1957, stands as the only exception to the prohibition against TVA becoming a source, "directly or indirectly," of power supply for areas outside TVA's area of primary responsibility and is specifically authorized in the TVA Act:

> Nothing in this subsection shall prevent the Corporation, when economically feasible, from making exchange power arrangements with other power-generating organizations with which the Corporation had such arrangements on July 1, 1957 . . . .

- Mississippi Power & Light Company and the Southern Company are power-generating organizations with which TVA had exchange power arrangements on July 1, 1957, and to which TVA could deliver energy and associated capacity temporarily in excess of TVA's needs in the event either system requested such energy and capacity.

o If TVA were legally able to do so and permitted DOE (and other existing customers in similar situations) to transfer power to TVA's interconnection points with neighboring utilities and sell it under interutility-type arrangements, this could replace deliveries to neighboring utilities of energy and associated capacity temporarily in excess of TVA's needs that TVA could conceivably make without granting such permission to its customers, resulting in a net loss of revenue to TVA.

- Several industrial customers have requested that underutilized power under contract at one TVA area location be transferred to another TVA area location to supply a new or expanded plant of the same company and would undoubtedly want to avail themselves of any opportunity to market such power under interutility transactions.

Attachment 3

TVA's Territorial Limitations

TVA advises that the basis of the territorial limitations established by Congress in 1959 are as described below:

The geographical availability of TVA power is governed by section 15d(a) of the TVA Act, which provides in pertinent part as follows:

> Unless otherwise specifically authorized by Act of Congress the Corporation shall make no contracts for the sale or delivery of power which would have the effect of making the Corporation or its distributors, directly or indirectly, a source of power supply outside the area for which the Corporation or its distributors were the primary source of power supply on July 1, 1957, and such additional area extending not more than five miles around the periphery of such area as may be necessary to care for the growth of the Corporation and its distributors within said area . . .

Power Generating organizations with whom TVA had power exchange arrangements in efect on July 1, 1957:

Carolina Power and Light Co.
Southern Co. (Georgia Power Co., Alabama Power Co., and Mississippi Power Co.)
Mississippi Power and Light Co.
Arkansas Power and Light Co.
Electric Energy, Inc. (Union Electric Co., Illinois Power Co., Central Illinois Public Service Co.)
Kentucky Utilities Co.
Louisville Gas and Electric Co. (Cincinnati Gas and Electric Co.)
East Kentucky Power Cooperative, Inc.
Appalachian Power Co.
Nantahala Power and Light Co.

Department of Energy
Washington, D.C. 20585

August 9, 1982

Mr. Robert D. Thorington
Johnson and Thorington
504 South Perry Street
Post Office Drawer 1748
Montgomery, Alabama 36103

Dear Mr. Thorington:

This is in response to your letter of June 30, 1982, requesting a definitive reply from the Department of Energy regarding your proposal for obtaining the available energy under our contract with the Tennessee Valley Authority (TVA), and a report on the discussions between DOE and TVA.

In our June 17, 1982, letter, we advised you that representatives of DOE met with TVA officials to discuss the disposal of the excess power under our contract with TVA. We also indicated to you that TVA had agreed to review this matter and respond to us by mid-July. DOE subsequently met with TVA officials on July 23, 1982. At that meeting TVA advised us that Section 15d(a) of the TVA Act prohibited it from marketing, directly or indirectly, outside their territorial limits. Also if their inter-utility agreements should permit power exchanges, TVA would market the excess power on their system while holding DOE and other customers to contract demand in order to minimize the loss of revenue to TVA.

TVA did agree to consider a specific proposal regarding the disposal of DOE's excess power to a generating utility; however, TVA indicated that they could see no basis for changing their position with respect to Section 15d(a) of the TVA Act. Although the prospect for any change in TVA's position is not encouraging, we plan to continue to pursue all possible options for the disposal of the excess power. Clearly, with respect to any specific proposal for the transmission of this power to a buyer or buyers, there would need to be an agreement to such an arrangement by the intervening utilities moving the power. Further, such an arrangement should not displace sales by a current supplier.

With respect to your comments regarding reference to 46 FR 42186 in our June 17, 1982, letter, our purpose in referring to the power marketing policy for the Cumberland System hydropower, which is set forth in 46 FR 42186, was merely to indicate the policy that Southeastern Power Administration would follow with respect to the reallocation of Cumberland hydropower as existing contracts or extensions for such power expire.

We are sorry we cannot give you more encouraging news, but will be pleased to keep you informed of any further developments which may relate to your proposal. Should you wish to discuss a more specific proposal with us, we will be happy to meet with you.

Sincerely,

R. Tenney Johnson

R. Tenney Johnson
General Counsel

cc: Honorable James B. Edwards
Secretary of Energy
George E. Grimball, Jr., Esq.

UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548

ENERGY AND MINERALS
DIVISION

September 30, 1982

B-209052

The Honorable Robert Walker
House of Representatives

The Honorable John Heinz
United States Senate

Subject: Analysis of the Feasibility of Tennessee Valley Authority Power Being Made Available through Power Exchange Arrangements to General Public Utilities (GAO/EMD-82-129)

An issue discussed at March 1982 hearings before the House Science and Technology Committee was the current excess power generation capacity of the Tennessee Valley Authority (TVA). The question arose as to the viability of "wheeling" 1/ excess TVA power to General Public Utilities (GPU). You asked that we make an independent investigation into the feasibility of a sale of TVA power to GPU and any problems that might be involved.

We found that any arrangement involving TVA power that would benefit GPU is unlikely at this time. Economics is the primary reason such arrangements have not occurred and probably will not occur unless TVA makes power available at prices lower than previously discussed with GPU. Even if the TVA power was economically competitive, there are some technical, legal, and institutional constraints which would be involved. For example, the TVA Act precludes a sale of power from TVA to GPU. TVA would have to sell power to systems with whom they had exchange arrangements in 1957. In turn, these systems could make power available to GPU.

OBJECTIVES, SCOPE, AND METHODOLOGY

Our objectives were to identify the feasibility and practicality of selling power from TVA to GPU. Early in our review, it became apparent that there were economic, technical, legal, and institutional constraints which may impede arrangements whereby GPU could benefit from surplus capacity on the TVA system. Therefore, our review focused on these constraints. Our review was

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1/The use of the transmission facilities of one system to transmit power to another system.

conducted in accordance with the Comptroller General's "Standards for Audit of Governmental Organizations, Programs, Activities, and Functions."

The provisions of the TVA Act (16 U.S.C. 831) do not provide for the sale of TVA power to GPU. As discussed later, GPU would not be precluded from purchasing power from any system which has power exchange arrangements with TVA. Any such arrangements will occur only if TVA's price of power is competitive. We reviewed a price that had been discussed in connection with TVA making power available to other systems with which it has power exchange arrangements and found that it was higher than prices GPU had received from others. We also discussed TVA's price with TVA officials who were knowledgeable about arrangements under which TVA power could be made available to other systems. We also discussed with GPU officials TVA's price in relation to other offers it had received for power. Since each utility system charges to wheel power, we discussed wheeling charges with the American Electric Power System (American), the Allegheny Power System (Allegheny), and the Cleveland Electric Illuminating Co. (Cleveland) in order to determine how wheeling rates could impede an arrangement. We also discussed with the Federal Energy Regulatory Commission (FERC) whether their authority to approve wheeling rates would inhibit any such arrangement.

In analyzing the technical constraints, we contacted utility officials from American, Allegheny, and Cleveland. These utilities would most likely be involved in any arrangement whereby GPU might benefit as a result of TVA power being made available under power exchange arrangements because they either are directly interconnected with GPU or have their own excess power to sell. We could obtain only a general description of their technical capabilities regarding their current demand and supply situation and how power could flow over their transmission networks. To thoroughly review the technical feasibility of power moving from TVA to neighboring systems, and their power in turn being moved to GPU, would require a detailed day-by-day analysis of demand and supply data for each utility system directly or indirectly involved in the arrangement. The cost and time requirements and the need to obtain specific utility data made this approach prohibitive for our review.

We also contacted the North American Electric Reliability Council, and two of its regional councils--the Mid-Atlantic Area Council and the East Central Area Reliability Coordination Agreement--in order to review their demand and supply forecasts and the interregional transfer capabilities among regions regarding a TVA and GPU arrangement. GPU identified for us the contracts it has entered for power purchases and the utilities involved in wheeling power to their systems; they also discussed their analysis of receiving power as a result of TVA power being made available under power exchange arrangements.

In order to address the legal and institutional constraints, we analyzed the TVA Act and met with officials of TVA's Office of General Counsel regarding TVA's ability to sell power outside its service area. We also met with officials of FERC and the Department of Energy (DOE) to determine Federal regulatory authorities and functions, particularly wheeling regulations. We reviewed the Federal Power Act (16 U.S.C. 791a) and regulations concerning filing wheeling rates and the authorities for ordering wheeling. In addition, the Edison Electric Institute and American Public Power Association, which represent private and public owned utilities respectively, provided their views and opinions on the legal difficulties in such arrangements.

An ancillary issue brought out in the March 1982 hearings was the demand charge 1/ DOE was paying to TVA for power contracted for but not now needed at its Oak Ridge, TN and Paducah, KY, facilities. DOE has contracts with TVA to supply power to these facilities through 1995. Because of a decrease in the demand for uranium enrichment services, DOE has not used all the power under the contracts. However, it is paying TVA a demand charge for the power for which it contracted and TVA made available--about $110 million in fiscal year 1982. DOE believes it may be paying the demand charge for several years without using all the contracted power and thus has begun an effort with TVA to obtain relief from the demand charge. DOE has also considered the possibility of taking the contracted amount of power and marketing it themselves. We discussed the demand charge issue with TVA officials and DOE officials located in Washington, D.C., and Oak Ridge. We also reviewed correspondence between TVA and DOE to determine the reasonableness of both parties' positions. Since we found that legal counsel for both TVA and DOE agreed that DOE was liable for the demand charge, we did no further work on this. We note, however, that DOE is still investigating possible legal avenues for relief.

BACKGROUND

GPU--a holding company in the Pennsylvania-New Jersey-Maryland (PJM) power pool 2/--is comprised of three utilities: Jersey Central Power and Light, the Pennsylvania Electric Company, and the Metropolitan Edison Company. GPU has experienced a deficiency in generating capacity since March 1979 when an accident at its Three Mile Island (TMI) nuclear plant unit 2 caused it to

1/A charge, also known as a capacity charge, designed to cover the fixed cost incurred by a utility for reserving a specific amount of generating capacity on its system for purchase.

2/The PJM pool contains eleven privately owned electric utilities which in many respects operate as a single system.

lose 1,656 megawatts 1/ (MW) of generation from TMI units 1 and 2 --unit 1 which was shut down for refueling has been delayed in restarting. This loss of TMI generation (approximately 24 percent of its generating capacity) has caused GPU to seek power from utilities within and outside the PJM pool. GPU has been able to purchase sufficient short-term power to meet its systems' needs but would like to be assured of a secure source of power on a long-term basis due to the uncertainty of when the TMI units would return to service. Power purchases have been from utilities within the PJM pool and utilities surrounding the pool. Recently, more power has been available from surrounding utilities due to surplus capacity.

TVA has excess generation that conceivably could be utilized by systems with whom it has exchange arrangements. In turn, these systems could make power available to GPU. TVA, like many utilities, has built powerplants to meet expected demands which did not occur. As a result, TVA has deferred four nuclear units under construction and cancelled construction of four others. TVA is constructing four nuclear units currently scheduled to start operation during 1984-1988. With these units added to its system, TVA projects power generating capacity in excess of its needs until 1994 under a high load forecast and beyond 2000 under a low load forecast. Therefore, TVA could be in a position to make power available under power exchange arrangements over a considerably long period of time.

Other utilities near GPU also have excess capacity. American, Allegheny, and the Detroit Edison Co. have all offered to sell power to GPU. In addition, Canada has offered to sell GPU surplus power. In fact, GPU was considering an interconnection linking their system with Ontario Hydro through new lines to be built under Lake Erie, but GPU decided in June 1982 not to pursue this option.

TVA'S POWER PRICE HIGHER THAN PRICES FOR NON-FIRM POWER

Between May and August 1981, TVA discussed with GPU the possibility of making available up to 1,000 MW of power. TVA originally discussed this with GPU in May 1981 because it had excess power and GPU was purchasing, at times, high cost, oil-fired power to help alleviate the loss of power from TMI. According to a GPU official, they were interested in arrangements involving TVA power chiefly because it would be available on a long-term basis--until 1995. GPU sought offers for power purchases to 1995 but other systems would only offer power to 1985 or 1990.

1/One megawatt equals 1,000 kilowatts.

In a June 1981 meeting between TVA and GPU, power demand and supply forecasts were exchanged and technical and legal problems associated with arrangements involving TVA power were reviewed. TVA provided GPU with informal price estimates through 1985 as well as for the years 1990 and 1995. TVA indicated an availability of 4,000 MW of power during 1981-82 at a demand charge of 10 mills and an energy charge 1/ of 30 mills per kilowatt hour (kWh) 2/. Based on these charges, GPU estimated the total cost of power it might be able to purchase as a result of such arrangement would be about 50 mills per kWh when delivered. The 50 mill estimate was based on TVA's 10 mill demand and 30 mill energy charge, plus a wheeling charge of 7 mills to bring power it purchased through two systems.

In late July 1981, GPU told TVA that although such arrangements were being considered, American was more competitive because its offered price was lower than TVA's and one less wheeling charge was required. GPU also advised TVA that negotiations were underway with Michigan and Canada which could reduce to 500 MW the potential power needed. On August 21, 1981, GPU officials advised TVA that it appeared the price under a TVA arrangement would exceed other offers GPU had received for power, and they would notify TVA if any of the lower offers failed to materialize.

After this notice, no further contact concerning power arrangements involving TVA power occurred until May 1982. At that time, TVA again contacted GPU to determine whether conditions had improved for acquiring power from systems with which TVA had power exchange arrangements. GPU told TVA that power reflecting TVA prices was even less economically attractive than before. Reasons given were (1) many utilities had excess capacity that GPU could purchase at more favorable prices, and (2) utilities that were previously unwilling to sell power on a long-term basis were now willing to do so.

In June 1982, GPU contracted to buy 650 megawatts of power from the Detroit Edison Co. at a delivered price estimated at 30 to 33 mills per kWh. The power will be wheeled from the Detroit Edison

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1/The energy charge is the unit cost applied to the production of electricity generally consisting of the annual fuel and variable cost of the generating plant. A specified mark-up of 10-15 percent is usually added to the energy charge; in this case, GPU estimated the mark-up at 3 mills.

2/A measure of an amount of electric energy consumed, delivered, or generated over a period of one hour at the rate of one kilowatt. One kilowatt equals 1,000 watts.

Co. to GPU through the Central Area Power Coordinating Group (principally through the Toledo Edison Company and Cleveland). The contract extends through 1990 with a fixed demand charge for the contract period. GPU is also continuing negotiations with American to buy power on a long-term basis and continues to purchase relatively inexpensive power on a short-term basis from neighboring utilities outside the PJM pool. The cost of this power ranges from 28 to 32 mills per kWh.

Basis for TVA's price

Prices at which TVA makes power available under power exchange arrangements reflect the particular conditions and circumstances of the respective transactions. Each sale is considered on a case-by-case basis. In its discussions with GPU regarding the availability of 1,000 MW of power to systems with which it had exchange arrangements, TVA considered this arrangement as a long-term contract, subject to interruption only to protect service for TVA's firm obligations. The price TVA discussed was based on the system average demand charge and on the incremental energy charge of its most expensive 1,000 MW of generation. While this turned out to be higher than prices for power (non-firm power) that could be acquired by GPU under other arrangements, TVA realizes it could have discussed other prices with GPU. TVA points out that prices could have varied under different types of contracts or contract stipulations. TVA said no other prices were mentioned to GPU since no intensive discussion of any such possible arrangement occurred.

TECHNICAL, LEGAL, AND INSTITUTIONAL CONSTRAINTS COULD ALSO HAMPER ARRANGEMENTS INVOLVING TVA POWER

In addition to the economics, there are technical, legal, and institutional constraints that could hamper the development of arrangements whereby GPU could benefit from surplus capacity on the TVA system. It is unclear whether these constraints would be the overriding factor since GPU discussions with TVA broke off in 1981 and 1982 due to economic constraints. Both TVA and GPU officials stated that if the economics were worked out arrangements consistent with technical and legal requirements could probably be developed. Nonetheless, we found that

--technical constraints could hamper arrangements because no direct interconnection exists between TVA and GPU, thus requiring power to be wheeled through several systems to reach GPU, and

--legal and institutional constraints exist that limit the types of arrangements whereby remote systems may benefit from power available from the TVA system.

Technical constraints

No direct interconnections exist between TVA and GPU; any power would have to flow through a minimum of two intermediate utility systems before reaching GPU. The PJM pool--of which GPU is a member--has interconnections with the following utility systems: the New York Power Pool to the north, the Virginia Electric Power Company to the south, and Allegheny and Cleveland to the west. In discussing a possible arrangement, TVA and GPU did not consider wheeling power through either the Virginia Electric System or the New York Power Pool. Virginia Electric lacks the ability to move additional power north into the PJM pool because there are inadequate transmission facilities for moving power across the Potomac River. The New York Power Pool was also not considered an option because being north of PJM, TVA power would have to move through Canada or PJM to get to the New York Power Pool. Thus, Allegheny and Cleveland were the two alternatives considered for wheeling power to GPU from a system having exchange arrangements with TVA.

TVA, however, has no direct interconnections with either Allegheny or Cleveland. Any power coming from TVA would be sold and delivered to American to the north. GPU could then acquire power from American which could be wheeled by Allegheny or Cleveland east to GPU. Consequently, by using this route there would be a minimum of two other utility systems involved with the associated charges being included in the price of power acquired by GPU.

The uncertainty also exists whether American, which has exchange arrangements with TVA, would want to sell power to GPU and whether Allegheny or Cleveland would be willing to wheel power from American to GPU on a long-term basis. By entering into a long-term wheeling arrangement, a utility would have to dedicate a portion of its transmission network for this purpose. This reduces the intermediate utilities' flexibility in operating their systems and planning to meet future demand requirements. For example, the utilities may have excess power of their own that could be sold to GPU. Also, the TVA power flowing through intermediate systems could impair the reliability of their systems or hinder their ability to fulfill existing contracts. The longer the distance power must flow or the greater the number of systems through which it flows, the greater the likelihood that a transfer could affect the reliability of the intermediate systems or impede their operations. Thus, since a utility must first consider the needs of the system and those of its ratepayers/stockholders, it may be reluctant to wheel power for another utility.

Legal/institutional constraints

The TVA Act, as amended in 1959 limits the number of systems with which TVA can exchange power to 12. However, the Act does

not preclude systems that have exchange arrangements with TVA from entering into agreements to sell power to systems that do not have arrangements with TVA. As a result, transactions resulting from such arrangements involve additional contractual obligations over those involved in selling power from one system to another. In testimony before the Energy and Water Development Subcommittee of the House Appropriations Committee in March 1982, TVA Chairman Charles Dean stated that the TVA Act would not preclude TVA from exchanging power with neighboring utilities who in turn could sell it to other utilities including GPU. For example, during the months January to March 1980, power was delivered to GPU through a series of buy and sell arrangements between TVA, American, Allegheny, and GPU.

FERC's wheeling authorities probably would not prevent GPU's purchase of power from a system having an exchange arrangement with TVA. Section 205 of the Federal Power Act gives FERC the authority over wheeling rates set by utilities providing transmission services. The rates set by the utilities wheeling power to GPU would be subject to FERC approval. According to a FERC official, however, wheeling rates are generally approved if the parties involved agree to them and there are no intervening parties. If GPU could reach an agreement on a purchase and the intermediate utilities were willing to wheel the power, it is unlikely that FERC would disapprove. Under sections 211 and 212 of the Federal Power Act, FERC has the authority to order wheeling but only upon application from utilities and the satisfaction of numerous criteria. FERC has never issued an order to wheel power. It seems unlikely that they would order power, purchased from a system having exchange arrangements with TVA, to be wheeled to GPU due to the numerous criteria involved. However, FERC believes these criteria do not appear insurmountable.

The basic organization and structure of the utility industry can impede the movement of power over a long distance. Each utility is first responsible for meeting the needs of its own customers within its service area and, therefore, has primarily built a generation and transmission network to meet this demand. Power sales from its own system or wheeling power through its system would occur only if its own system reliability is not jeopardized. Arrangements under which GPU could buy power from a company having exchange arrangements with TVA would require the cooperation of many utilities operating within this framework, and utilities must benefit or not be placed at a disadvantage as a result. One approach to moving power over a long distance on a continual basis is through development of direct current transmission interties between regions. Such an intertie exists between the Pacific Northwest and Southwest which transfers large amounts of electricity over a long distance on a continual basis. To develop this transmission line required the cooperation of many utilities in assessing the benefits and costs of the line and then in its

development and operation. Only by the utilities jointly working to develop the line was it achieved. This same cooperation may be needed even more in the future as utilities and regions have excess capacity that could be used in other regions.

AGENCY COMMENTS

A draft of this report was provided to GPU, TVA, DOE, and FERC for comment. GPU stated the report accurately reflected the circumstances surrounding an arrangement between TVA and GPU. However, they provided information to clarify several areas in the report. These comments were incorporated.

TVA did not provide any overall comments on the report but suggested a number of language changes which they believed would present more clearly the conditions by which TVA could make power available to benefit GPU. We made several changes in the report to accommodate TVA's suggestions. In those cases where changes were not made, we discussed the matter with TVA officials who agreed changes were not needed.

DOE did not provide official comments, but did offer some suggestions regarding their contracts for power purchases from TVA. The changes suggested by DOE have been incorporated into the report.

FERC provided official written comments on the report. (See enclosure I.) FERC staff found the description of the technical, institutional, and legal factors that would impact on a power exchange between TVA and GPU to be consistent with their understanding of such an arrangement. FERC provided comments on the detailed technical aspects of how power could actually flow between TVA and GPU. We believe the report describes, in non-technical terms, the constraints involved in power flowing from TVA to GPU. In addition, FERC provided comments which clarified their authority to order wheeling.

- - - - -

Unless you publicly announce the report's contents earlier, we plan no further distribution of this report until 30 days from the date of the report. At that time, we will send copies to interested parties and make copies available to others upon request.

F. Kemi Bolard

J. Dexter Peach
Director

Enclosure

32-770 O - 84 - 10

ENCLOSURE I

ENCLOSURE I

FEDERAL ENERGY REGULATORY COMMISSION

WASHINGTON 20426

SEP 2 8 1982

Mr. J. Dexter Peach
Director, Energy and Minerals Division
United States General Accounting Office
Washington, D. C. 20548

Dear Mr. Peach:

This is in response to your letter of September 20, 1982, requesting comment on a draft report "Analysis of the Feasibility of a Sale of Power from the Tennessee Valley Authority to General Public Utilities".

The Commission's staff has reviewed the report. It finds that the report's description of the technical, institutional and legal factors generally agrees with its own understanding and perceptions. It endorses the report's finding that any problems in these categories are not of sufficient magnitude to prevent such a sale, if it were economic. Major transfers of power always require resolution of reliability and economic impact issues.

The discussion of wheeling on pages 6 and 7 could leave the incorrect impression that TVA and GPU can select the paths of ac power flow between the two systems. In fact, the power flow at any moment will be determined by the impedances of the various parts of the network and the generation and load levels of all the interconnected systems. Even if there were a direct ac interconnection between TVA and GPU, significant effects upon other systems would occur. Although a direct ac interconnection would establish a "contract path", it would not in itself eliminate or compensate for the effects upon other systems. Thus, the discussion on page 10 relates basically to contract paths.

Contract paths ordinarily are selected as those offering the greatest transmission capacity. Systems along the contract path, while they do not control the power flows, benefit from inclusion in the transfer arrangements. Inclusion assists the adjustments needed to accommodate the changed power flows and provides compensation for use of transmission facilities and for any increases in energy losses.

Wheeling contracts with American Electric Power and Allegheny Power Systems, while establishing a contract path, may not compensate Cleveland Electric and its associates in the Central Area Power Coordinating Group (CAPCO) for the effects imposed upon them. Consequently, those systems might intervene

ENCLOSURE I

in FERC proceedings on wheeling rates to assure compensation or protection. As mentioned on page 8 , a dc intertie between TVA and GPU would avoid the impacts on other systems. However, the construction of the line would require the approval of authorities in states along its route. Such approvals can be difficult to obtain if the line does not benefit ratepayers in those states.

The statement on page 8, that it is unlikely that FERC could issue a wheeling order for TVA transfers to GPU, is misleading. While there are a number of criteria to be met, none appears to be insurmountable absent a hearing record to the contrary.

We appreciate the opportunity to offer these comments.

Sincerely,

C. M. Butler III
Chairman

GAO Note: Page number references in this letter have been changed to correspond with the page numbers in this final report.

THE ENERGY DAILY
Thursday, November 17, 1983

Swedes Cancel, Commonwealth Edison Close

DOE's Enrichment Losses Soar

BY RICHARD MYERS

About a week ago, the Department of Energy's uranium enrichment division lost about $180 million worth of business and, unless it moves with some dispatch, will lose another $140 million shortly. About a week ago, the Energy Department received a formal notice from three Swedish utilities that they were cancelling orders placed with DOE for 1.3-1.4 million SWUs (separative work units, the standard measure of uranium enrichment); at roughly $140 per SWU, that works out to about $180 million. The enriched uranium was scheduled for delivery over a five-year period, from 1986 to 1990. The Swedish companies bought instead from ENEL, the Italian state utility, which had a large surplus to dispose of and offered steep discounts—as low as $80 per SWU by some reports.

Chicago's Commonwealth Edison Co. also has told the Energy Department that it has a similar offer in hand for almost one million SWUs and has "indicated that they will take it, and cancel with us" unless DOE comes up with a reasonable counteroffer. Commonwealth's source of supply: also the Italians, although this time the seller is AGIP; the offer apparently carries the same enticing discount. (The Italian SWUs are brokered in the U.S. though Nuexco, the California-based nuclear fuel consultancy and trader.) If Commonwealth cancels its enrichment orders with the Energy Department, the Italian SWUs would "cover their total SWU commitment to us for fiscal years 1984 and 1985," said a DOE official. Commonwealth Edison vice president George Rifakes refused adamantly to be drawn into any discussion of his Italian deal, fielding a string of questions with "no comment." The Energy Department's enrichment order book shows that Commonwealth Edison needs fuel for five reactors in 1984-'85: Zion 1, LaSalle 1 and 2, and Byron 1 and 2.

The three Swedish utilities which have already cancelled their 1.3-1.4 million SWU order with DOE are: the Swedish State Power Board (which operates the four Ringhals units and the three Forsmark reactors); OKG Aktiebolag (which runs Oskarshamn 1, 2 and 3); and Sydsvenka Kraft (which operates the two Barseback units). The Energy Department's most recent loss (or near loss) of roughly $320 million worth of enrichment business is offset to a very minor extent by termination charges levied on the utilities involved. Since June, the agency has lost around two million SWUs of business, a DOE official told *The Energy Daily*—not counting the nearly one-million-SWU order from Commonwealth Edison. (In July, DOE's losses on SWUs scheduled for delivery in '83, '84 and '85—but cancelled—reached about $1 billion.)

Earlier this year, the Energy Department's nuclear division decided to scrap its year-long attempt to develop a new, more competitive enrichment contract, which had been called the Facility Requirements (FR) contract—largely because it clearly failed to satisfy the needs of the electric utility industry. In its place, the agency developed an improved version—called the Utility Services (US) contract. The agency's nuclear division completed its drafting of the US contract in midsummer this year, and sent it along for review and approval by a senior DOE policy committee chaired by Earl Gjelde, a special assistant to Energy Secretary Don Hodel. Six months later, Gjelde and his committee still haven't completed their review—amid much speculation, within the agency and without, that they are lost in a sea of strange and unfamiliar words and concepts (like "SWU"). While they ponder, the hemorrhage of DOE enrichment revenues and orders continues.

Jacksonville Electric Authority

233 WEST BAY STREET • P O BOX 6300 • JACKSONVILLE FLORIDA 32205

November 17, 1983

Mr. R. D. Thorington
Johnson & Thorington
Post Office Box 1748
Montgomery, Alabama 36103

Dear Bob:

Thank you for inviting us to review the TVA/DOE energy option.

As you recall, JEA had a keen interest in this option back when we had the series of meetings with TVA, DOE, the Fuel Enrichment folks, SEPA, and a variety of utilities. We assessed this option, along with several others, for a considerable time. As in any business operation, we reached that point known as "decision time" when it was necessary that we zero in on the best possible alternative for JEA and proceed to making a deal.

Among the various options being considered was purchase of power and energy from the Seminole Electric Cooperative; the TVA/DOE possibility; and an offer of power and energy sales from the Southern Company. While we held the TVA/DOE option in high regard, it did not appear that we could forestall our decision while the necessary hurdles to the TVA/DOE power were overcome. We therefore opted to sign a long term (10 year) agreement with the Southern Company to purchase 600 megawatts of power.

We have in place two 500kV transmission intertios with Georgia Power Company which would have accommodated, through the Georgia Power Company 500kV grid, a means by which to transmit the TVA/DOE power from TVA into our system. We are now utilizing that transmission system for the purchase of the previous mentioned 600 megawatts of Southern power.

Bob, I must regretfully, at this time, decline further pursuit of the TVA/DOE power since our Southern contract substantially provides all of the purchased power which we can, at this time, absorb into our system. We do; however,

encourage you and others to pursue the acquisition of the TVA power since it makes sense that municipal utilities should have opportunities to improve the rates to their customers and at the same time offset the excess generation capacity on the TVA system. If at some future date, the TVA power were to be made available to municipal utilities, at that time, JEA would renew their interest in analyzing the cost benefit of such purchases versus the construction of new generation or other types of purchase arrangements.

Again, let me thank you for your offer and I hope that we will be able to maintain contact with each other regarding this issue.

Sincerely,

Richard A. Basford
Associate Managing Director
System Engineering & Operations

rab;js

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PLEASE REPLY TO
MONTGOMERY

February 7, 1984

Mr. Paul Gilman
Offices of Senator Pete V. Domenici
Washington, D.C. 20510

Re: Testimony of Robert D. Thorington, Esq. before the Subcommittee on Regional and Community Development of the Senate Committee on Environmental and Public Works, November 14, 1983

Our ref: M-01508/007

Dear Mr. Gilman:

Enclosed are my responses to the questions in Senator Domenici's letter of January 16, 1984, concerning the testimony I presented last November as referenced above about DOE/TVA surplus energy and capacity. I am enclosing some further documents that may be helpful.

For those questions relating to DOE costs and prices, you can undoubtedly obtain much more detailed information directly from DOE.

I was pleased to appear before the Subcommittee. If there is further information and assistance that you would find helpful, please contact me.

Sincerely,

Robert D. Thorington

RDT:sa

Enclosures

QUESTION 1

Throughout your written testimony you refer to "sparing the taxpayers" of this country hundreds of millions of dollars in demand charges. Could you please explain how the taxpayers of this country are paying the demand charges resulting from the contract entered into by the Department of Energy and the Tennessee Valley Authority to supply power to the Oak Ridge Uranium Enrichment Plant? Isn't it true that those costs are recovered through the Department of Energy's charge to ut. ities for uranium enrichment?

RESPONSE TO QUESTION 1

1) It is my understanding that for the past two years the DOE enrichment program has received an appropriation of $2 billion. This is money supplied by taxpayers. In the period until services are sold and paid for, all costs are borne by taxpayers.

2) I bring to your attention the fact that DOE's budget request in the federal budget recently submitted for fiscal year 1985, at page IJ7, requests an appropriation or budget authority of $2,195,000,000 regarding uranium enrichment services with projected or estimated recovered cost amounting to $2,105,000,000 for a shortfall of $90,000,000, to be borne, I assume, by the taxpayers. Similar shortfalls also have existed in federal budgets for prior fiscal years. For example, the shortfall in the 1983 federal budget was $137,000,000. Thus it appears that DOE does not recover the total costs of its enrichment program from the intended purchasers of its services, and shortfalls are borne by the taxpayers

3) I understand DOE has initiated a new pricing policy since the date of my testimony. See Energy Daily, January 5, 1984, "Energy Department Unveils New Uranium Enrichment Contract" (attached). This new policy appears to lower somewhat the planned charge for uranium enrichment services, and raises a question in my mind as to DOE's ability under this new rate to recover its full costs under any circumstances. DOE ought to be able to supply you with more detailed information about this.

4) In any event, to the extent DOE sells enrichment services to United States utilities, their customers wind up paying for the cost of the unused capacity. TVA's unwillingness to consent to a sale of DOE energy, because of its desire to lower its own rates, thus foists the burden of TVA's unused capacity on ratepayers around the country. This practice is highly questionable. (To the extent that defense facilities rely on DOE's services -- a matter not disclosed to my knowledge -- the taxpayers are also paying. Furthermore, defense use of DOE enrichment involves not only the use of enriched uranium, but defense-related purchases of electricity from utilities using DOE enriched uranium.)

QUESTION 2

In your testimony you refer to the demand charge which the Department of Energy is currently required to pay as a "standard clause." Do you believe that TVA, in requiring such a charge, has acted outside the interests of its rate payers? Do you believe that such a clause is an appropriate part of any contract with utilities for large industrial users of power which might require the construction of additional generating capacity within the utility system?

RESPONSE TO QUESTION 2

The demand charge concept in TVA's contract with DOE is standard, and in principle such a charge may protect the interests of TVA's ratepayers in a contract with a large industrial user; however, the existence of the demand charge is not the issue here. The central problem is TVA's refusal to consent to DOE's sale of the power, or to any of the other possible arrangements for sale outlined in my testimony. We have seen no legitimate reasons why TVA should be allowed to prevent DOE from mitigating its damages because of TVA's parochial concern about the rate impact of overbuilding and excess capacity to its own customers. Obviously DOE's disposition of its surplus power outside of the TVA area has no effect whatsoever on TVA rates or its ratepayers.

The following statement of TVA's position was contained at page 4 of the memorandum of the July 23, 1982 meeting between DOE and TVA. This memorandum was attached to my testimony.

> If TVA were legally able to do so and permitted DOE (and other existing customers in similar situations) to transfer power to TVA's interconnection points with neighboring utilities and sell it under interutility-type arrangements, this could replace deliveries to neighboring utilities of energy and associated capacity temporarily in excess of TVA's needs that TVA could conceivably make without granting such permission to its customers, resulting in a net loss of revenue to TVA.

We believe this to be a candid statement of TVA's real concerns here. They are not legal, but economic. TVA apparently did not perceive any Section 15d barrier to sales to General Public Utilities, as described in the September 30, 1982 GAO memorandum (B-2090052) that was attached to my testimony. This memorandum referred to a statement by TVA

Chairman Charles Dean before the Energy and Water Development Subcommittee of the House Appropriations Committee on March 23, 1982, to the effect that TVA was not precluded by Section 15d from exchanging power with neighboring utilities, who could in turn sell the power. I have now located this testimony, and the relevant portions are attached hereto. On the topic of TVA's purported legal disability, Mr. Dean said:

> To the extent TVA has power available beyond its needs, it can under exchange agreements sell it to most of its neighboring electric systems. These systems can, in turn, sell it to others....

Hearings, at p. 663. Thus, contrary to any position TVA may have taken on the issue of sales of surplus DOE power, it is clear that TVA does not believe it is under a blanket statutory disability to consent to a sale by DOE. 1/

Mr. Dean's discussion in these Hearings also sheds light on TVA's contracting practice and, to my mind, raises a question about the way in which TVA develops its charges for electricity. TVA appears to be charging for its services in a way that would not be permitted to a regulated utility. Mr. Dean explains that the minimum payment reflects that a large part of the cost of serving a customer is independent of how much power the customer uses and depends on how much power the customer has asked the utility to have available. Normally, this contract demand reflects the actual costs of generating capacity during the contract period. Mr. Dean goes on to state, however, that

> to the extent that TVA might at times be able to find a market for any power that an industrial customer may not then be using under its contract, this will provide some additional funds to help cover fixed costs

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1/ Even more importantly, TVA's power marketing outside the TVA area apparently proceeds on the assumption that all adjacent utilities will sell their own surplus and then be able to sell the TVA surplus at a profit. Section 15d, in this interpretation, gives the surrounding utilities and effective veto which exists in very few other areas of the country. But it is highly unlikely that the existing surplus which is held by the surrounding utilities will be sold off within the next several years; thus TVA has effectively precluded any sales of its own.

> (particularly those continuing after the expiration of power contracts) incurred in providing the facilities to serve the industrial customer.

Hearings at 664. In other words, TVA's own justification for refusal to consent to DOE's resale and for reselling the power itself is that it may be able to recover now for costs of generating capacity that are related to electricity generated and sold years from now, after the DOE contract expires. This is improper ratemaking. TVA is attempting to recover now for costs not related to electricity currently being sold.

The following example illustrates the problem. If DOE should not be a customer ten years down the line (a possibility that is dramatically increased by TVA's high costs and refusal to allow DOE to resell), TVA will sell the power at that time under one of two approaches: 1) TVA will charge its customers then for the cost of generating capacity, in which case TVA will have recovered this cost twice; or 2) TVA will not charge its customers then for the cost of generating capacity, in which case TVA's present customers, including DOE, will have paid part of the costs for electricity received ten years later by someone else. Neither possibility is permissible under the fundamental principles of ratemaking that rates should reflect costs, and that customers should pay for what they receive.

In summary, according to Mr. Dean TVA apparently wants to make DOE and any substitute purchasers pay for capacity that will be used by someone ten years in the future. A regulated electric utility, in my opinion, would almost never be allowed to structure its rates as TVA appears to have done. It creates an enormous potential for inequity between TVA's customers at different times.

Mr. Dean also protested, in his testimony, that "DOE's adjustments should not be made at the expense of TVA's ratepayers." Hearings at 664. It should be crystal clear that TVA's ratepayers will not be injured by the proposed DOE sale, unless the contract price TVA agreed to is itself injurious to TVA's customers. The same amount of money will flow to TVA if DOE purchases the power and resells it as if DOE purchased the power and used it. If the initial contract price (including the contract demand) fairly reflected the cost of providing firm power to DOE, the receipt of the contract amount, from whatever ultimate source, would compensate TVA, and TVA's ratepayers would end up paying no more than their fair share of costs. Only if the contract price does not compensate TVA fully for its costs (so that it believes it needs to sell the power a second time to pay for the generating capacity), can TVA complain on behalf of its customers. But TVA had no business in agreeing to a noncompensatory contract in the first place, with a consequent forced subsidization by TVA's other ratepayers of the power sold to DOE. Once again, the premises of TVA's argument should lead to serious questions about the appropriateness of TVA's pricing policies.

QUESTION 3

In your testimony you state that the Alabama Municipal Electric Association [sic] may have to pursue other options if they cannot successfully negotiate an arrangement with the Tennessee Valley Authority and the Department of Energy for the sale of excess power. Please identity the other options available to the Association [sic] and provide a comparison of the costs of power from those different sources.

RESPONSE TO QUESTION 3

The Alabama Municipal Electric Authority has under consideration other options for power supply, but would prefer not to identify them, or their relative costs, for competitive and negotiating reasons. However, the November 17, 1983 letter from the Jacksonville Electric Authority to me, which I attached to my testimony, describes the sources of energy that system was considering before it concluded its contract with the Southern Company.

QUESTION 4

You state in your testimony that the United States enrichment costs are "far above current market." Please provide figures for the U.S. cost and costs for competitors of the Department of Energy's enrichment customers as you understand them.

RESPONSE TO QUESTION 4

1) A November 10, 1983 memorandum to members of the Subcommittee on Regional and Community Development from the Subcommittee staff, at page 2, describes DOE current cost at approximately $138 per SWU. French and Italian competitors are reported as offering a price of $85 to $95 per SWU.

2) A November 17, 1983 article from the Energy Daily that was attached to my written testimony describes DOE charges at roughly $140 per SWU, while Italian competitors' services were priced as low as $80 per SWU by some estimates.

3) As mentioned in the response to your first question, DOE has adopted a new pricing policy since the date of my testimony, with a flexible ceiling price per SWU. DOE should be able to provide you more information in this regard.

QUESTION 5

You state in your testimony that even if a sale of power from the DOE could be arranged "we would have to arrange for transmission of the power (also known as "wheeling") by other electric utilities in the southeast." Please provide the Subcommittee with any communications you have had with those utilities regarding such transmission. More specifically, please provide the Subcommittee with correspondence you might have had with the Southeast Power Administration regarding their willingness to wheel power out of the TVA Area. I am especially interested in any SEPA correspondence which might confirm your statements that "there is no question that it can legally wheel power, even under the restriction of Section 15(D)." Please provide a copy of the NRC order you referred to in your verbal testimony which requires the Southern Company to wheel power to the municipals. Please provide the relevant agreement with the Mississippi Power and Light Company, which Mr. McDiarmid stated called for the transmission of power. Mr. McDiarmid also referred to an NRC license condition in this regard. Please provide that license condition.

RESPONSE TO QUESTION 5

We have not communicated with neighboring utilities specifically about wheeling for the energy that would be purchased here. To do so would be premature because the availability of the DOE surplus power is purely speculative at this point in time. Wheeling arrangements would depend on the purchaser and seller, the quantities involved, and terms of the sales contract. We know of no reason why satisfactory wheeling arrangements would not be obtained if the DOE surplus power actually ~~because~~ became available to the interested municipalities.

In my discussion of the legal alternative in which SEPA would take back power presently sold to TVA and would then market it, I stated that "there is no question that it can legally wheel power, even under the restriction of Section 15d." In this statement I was referring to wheeling by TVA, not SEPA, as your question appears to assume. (In fact, SEPA does not own any transmission lines and relies for all of its power marketing on transmission lines owned by others.) We do not have any correspondence from SEPA as to TVA's authority to wheel. We have discussed this matter with SEPA, and SEPA referred me to a decision of the Federal District Court in Kentucky Utilities Company v. Udall, Civ. No. 4835 (W.D.Ky. 1968) (copy attached) upholding, against a challenge based on Section 15d, a sale of SEPA power wheeled over TVA transmission lines to a point outside the TVA area.